

Multiple Choice Questions

1. Homemade leverage is:

- A. the incurrence of debt by a corporation in order to pay dividends to shareholders.
- B. the exclusive use of debt to fund a corporate expansion project.
- C.** the borrowing or lending of money by individual shareholders as a means of adjusting their level of financial leverage.
- D. best defined as an increase in a firm's debt-equity ratio.
- E. the term used to describe the capital structure of a levered firm.

Refer to section 16.2

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-1
Section: 16.2
Topic: Homemade leverage

2. Which one of the following states that the **value of a firm is unrelated to the firm's capital structure**?

- A. Capital Asset Pricing Model
- B.** M&M Proposition I
- C. M&M Proposition II
- D. Law of One Price
- E. Efficient Markets Hypothesis

Refer to section 16.3

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: M&M Proposition I

3. Which one of the following states that a firm's **cost of equity** capital is directly and proportionally related to the firm's capital structure?

- A. Capital Asset Pricing Model
- B. M&M Proposition I
- C.** M&M Proposition II
- D. Law of One Price
- E. Efficient Markets Hypothesis

Refer to section 16.3

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: M&M Proposition II

4. Which one of the following is the equity risk that is most related to the **daily operations** of a firm?

- A. market risk
- B. systematic risk
- C. extrinsic risk
- D.** business risk
- E. financial risk

Refer to section 16.3

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: Business risk

5. Which one of the following is the **equity risk** related to a firm's capital structure policy?

- A. market
 - B. systematic
 - C. extrinsic
 - D. business
 - E.** financial
- Refer to section 16.3

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: Financial risk

6. Butter & Jelly reduced its taxes last year by \$350 by increasing its interest expense by \$1,000. Which of the following terms is used to describe this tax savings?

- A.** interest tax shield
- B. interest credit
- C. financing shield
- D. current tax yield
- E. tax-loss interest

Refer to section 16.4

AACSB: N/A

Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: Interest tax shield

7. The unlevered cost of capital refers to the cost of capital for a(n):

- A. private entity.
- B. all-equity firm.**
- C. governmental entity.
- D. private individual.
- E. corporate shareholder.

Refer to section 16.4

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: Unlevered cost of capital

8. The explicit costs, such as legal and administrative expenses, associated with corporate default are classified as _____ costs.

- A. flotation
- B. issue
- C. direct bankruptcy**
- D. indirect bankruptcy
- E. unlevered

Refer to section 16.5

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.5
Topic: Bankruptcy costs

9. The costs incurred by a business in an effort to avoid bankruptcy are classified as _____ costs.

- A. flotation
- B. direct bankruptcy
- C. indirect bankruptcy**
- D. financial solvency
- E. capital structure

Refer to section 16.5

AACSB: N/A
Bloom's: Knowledge

Difficulty: Basic
Learning Objective: 16-3
Section: 16.5
Topic: Bankruptcy costs

10. By definition, which of the following costs are included in the term "financial distress costs"?

- I. direct bankruptcy costs
- II. indirect bankruptcy costs
- III. direct costs related to being financially distressed, but not bankrupt
- IV. indirect costs related to being financially distressed, but not bankrupt

- A. I only
 - B. III only
 - C. I and II only
 - D. III and IV only
 - E. I, II, III, and IV**
- Refer to section 16.5

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.5
Topic: Financial distress costs

11. The proposition that a firm borrows up to the point where the marginal benefit of the interest tax shield derived from increased debt is just equal to the marginal expense of the resulting increase in financial distress costs is called:

- A. the static theory of capital structure.**
- B. M&M Proposition I.
- C. M&M Proposition II.
- D. the capital asset pricing model.
- E. the open markets theorem.

Refer to section 16.6

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.6
Topic: Static theory of capital structure

12. Which one of the following is the **legal proceeding** under which an insolvent firm can be reorganized?

- A. restructure process
- B. bankruptcy**

- C. forced merger
 - D. legal takeover
 - E. rights offer
- Refer to section 16.10

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Bankruptcy

13. A business firm ceases to exist不复存在 as a going concern as a result of which one of the following?

- A. divestiture
 - B. share repurchase
 - C. liquidation
 - D. reorganization
 - E. capital restructuring
- Refer to section 16.10

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Liquidation

14. Edwards Farm Products was unable to meet its financial obligations and was forced into using legal proceedings to restructure itself so that it could continue as a viable business. The process this firm underwent is known as a:

- A. merger.
 - B. repurchase program.
 - C. liquidation.
 - D. reorganization.**
 - E. divestiture.
- Refer to section 16.10

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Reorganization

15. The absolute priority rule determines:
A. when a firm must be declared officially

- bankrupt.
- B. how a distressed firm is reorganized.
 - C. which judge is assigned to a particular bankruptcy case.
 - D. how long a reorganized firm is allowed to remain under bankruptcy protection.
 - E. which parties receive payment first in a bankruptcy proceeding.**
- Refer to section 16.10

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Absolute priority rule

16. A firm should select the capital structure that:
A. produces the highest cost of capital.
B. maximizes the value of the firm.
C. minimizes taxes.
D. is fully unlevered.
E. equates the value of debt with the value of equity.
Refer to section 16.1

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-1
Section: 16.1
Topic: Capital structure

17. The value of a firm is maximized when the:
A. cost of equity is maximized.
B. tax rate is zero.
C. levered cost of capital is maximized.
D. weighted average cost of capital is minimized.
E. debt-equity ratio is minimized.
Refer to section 16.1

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-1
Section: 16.1
Topic: Firm value

18. The optimal capital structure has been achieved when the:
A. debt-equity ratio is equal to 1.
B. weight of equity is equal to the weight of debt.

C. cost of equity is maximized given a pre-tax cost of debt.

D. debt-equity ratio is such that the cost of debt exceeds the cost of equity.

E. debt-equity ratio results in the lowest possible weighted average cost of capital.

Refer to section 16.1

AACSB: N/A

Bloom's: Knowledge

Difficulty: Basic

Learning Objective: 16-1

Section: 16.1

Topic: Capital structure

19. AA Tours is comparing two capital structures to determine how to best finance its operations. The first option consists of all equity financing. The second option is based on a debt-equity ratio of 0.45. What should AA Tours do if its expected earnings before interest and taxes (EBIT) are less than the break-even level? Assume there are *no taxes*.

A. select the leverage option because the debt-equity ratio is less than 0.50

B. select the leverage option since the expected EBIT is less than the break-even level

C. select the unlevered option since the debt-equity ratio is less than 0.50

D. select the unlevered option since the expected EBIT is less than the break-even level

E. cannot be determined from the information provided

Refer to section 16.2

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-1

Section: 16.2

Topic: Financial leverage

20. You have computed the break-even point between a levered and an unlevered capital structure. Assume there are no taxes. At the break-even level, the:

A. firm is just earning enough to pay for the cost of the debt.

B. firm's earnings before interest and taxes are equal

to zero.

C. earnings per share for the levered option are exactly double those of the unlevered option.

D. advantages of leverage exceed the disadvantages of leverage.

E. firm has a debt-equity ratio of .50.

Refer to section 16.2

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-1

Section: 16.2

Topic: Financial leverage

21. Which one of the following statements is correct concerning the relationship between a levered and an unlevered capital structure? Assume there are no taxes.

A. At the break-even point, there is no advantage to debt.

B. The earnings per share will equal zero when EBIT is zero for a levered firm.

C. The advantages of leverage are inversely related to the level of EBIT.

D. The use of leverage at any level of EBIT increases the EPS.

E. EPS are more sensitive to changes in EBIT when a firm is unlevered.

Refer to section 16.2

AACSB: N/A

Bloom's: Knowledge

Difficulty: Basic

Learning Objective: 16-1

Section: 16.2

Topic: Break-even point

22. Jessica invested in Quantro stock when the firm was unlevered. Since then, Quantro has changed its capital structure and now has a debt-equity ratio of 0.30. To unlever her position, Jessica needs to:

A. borrow some money and purchase additional shares of Quantro stock.

B. maintain her current equity position as the debt of the firm did not affect her personally.

C. sell some shares of Quantro stock and hold the proceeds in cash.

D. sell some shares of Quantro stock and loan out

the sale proceeds.

E. create a personal debt-equity ratio of 0.30.

Refer to section 16.2

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-1

Section: 16.2

Topic: Homemade leverage

23. Which one of the following makes the capital structure of a firm irrelevant?

A. taxes

B. interest tax shield

C. 100 percent dividend payout ratio

D. debt-equity ratio that is greater than 0 but less than 1

E. homemade leverage

Refer to section 16.2

AACSB: N/A

Bloom's: Knowledge

Difficulty: Basic

Learning Objective: 16-1

Section: 16.2

Topic: Homemade leverage

24. M&M Proposition I with no tax supports the argument that:

A. business risk determines the return on assets.

B. the cost of equity rises as leverage rises.

C. the debt-equity ratio of a firm is completely irrelevant.

D. a firm should borrow money to the point where the tax benefit from debt is equal to the cost of the increased probability of financial distress.

E. homemade leverage is irrelevant.

Refer to section 16.3

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-1

Section: 16.3

Topic: M&M Proposition I with no tax

25. The concept of homemade leverage is most associated with:

A. M&M Proposition I with no tax.

B. M&M Proposition II with no tax.

C. M&M Proposition I with tax.

D. M&M Proposition II with tax.

E. static theory proposition.

Refer to section 16.3

AACSB: N/A

Bloom's: Knowledge

Difficulty: Basic

Learning Objective: 16-1

Section: 16.3

Topic: M&M Proposition I with no tax

26. Which of the following statements are correct in relation to M&M Proposition II with no taxes?

I. The required return on assets is equal to the weighted average cost of capital.

II. Financial risk is determined by the debt-equity ratio.

III. Financial risk determines the return on assets.

IV. The cost of equity declines when the amount of leverage used by a firm rises.

A. I and III only

B. II and IV only

C. I and II only

D. III and IV only

E. I and IV only

Refer to section 16.3

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-1

Section: 16.3

Topic: M&M Proposition II with no taxes

27. M&M Proposition II is the proposition that:

A. the capital structure of a firm has no effect on the firm's value.

B. the cost of equity depends on the return on debt, the debt-equity ratio, and the tax rate.

C. a firm's cost of equity is a linear function with a slope equal to $(R_A - R_D)$.

D. the cost of equity is equivalent to the required rate of return on a firm's assets.

E. the size of the pie does not depend on how the pie is sliced.

Refer to section 16.3

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: M&M Proposition II

28. The business risk of a firm:

- A. depends on the firm's level of unsystematic risk.
 - B. is inversely related to the required return on the firm's assets.
 - C. is dependent upon the relative weights of the debt and equity used to finance the firm.
 - D.** has a positive relationship with the firm's cost of equity.
 - E. has no relationship with the required return on a firm's assets according to M&M Proposition II.
- Refer to section 16.3

AACSB: N/A
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: Business risk

29. Which of the following statements related to financial risk are correct?

- I. Financial risk is the risk associated with the use of debt financing.
 - II. As financial risk increases so too does the cost of equity.
 - III. Financial risk is wholly dependent upon the financial policy of a firm.
 - IV. Financial risk is the risk that is inherent in a firm's operations.
- A. I and III only
 - B. II and IV only
 - C. II and III only
 - D.** I, II, and III only
 - E. I, II, III, and IV
- Refer to section 16.3

AACSB: N/A
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: Financial risk

30. M&M Proposition I *with tax* supports the theory

that:

- A.** a firm's weighted average cost of capital decreases as the firm's debt-equity ratio increases.
 - B. the value of a firm is inversely related to the amount of leverage used by the firm.
 - C. the value of an unlevered firm is equal to the value of a levered firm plus the value of the interest tax shield.
 - D. a firm's cost of capital is the same regardless of the mix of debt and equity used by the firm.
 - E. a firm's cost of equity increases as the debt-equity ratio of the firm decreases.
- Refer to section 16.4

AACSB: N/A
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition I with taxes

31. M&M Proposition I with taxes is based on the concept that:

- A. the optimal capital structure is the one that is totally financed with equity.
 - B. the capital structure of a firm does not matter because investors can use homemade leverage.
 - C. a firm's WACC is unaffected by a change in the firm's capital structure.
 - D.** the value of a firm increases as the firm's debt increases because of the interest tax shield.
 - E. the cost of equity increases as the debt-equity ratio of a firm increases.
- Refer to section 16.4

AACSB: N/A
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition I with taxes

32. M&M Proposition II with taxes:

- A.** has the same general implications as M&M Proposition II without taxes.
- B. states that a firm's capital structure is irrelevant.
- C. supports the argument that business risk is determined by the capital structure decision.
- D. supports the argument that the cost of equity

decreases as the debt-equity ratio increases.
E. concludes that the capital structure decision is irrelevant to the value of a firm.
Refer to section 16.4

AACSB: N/A
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition II with taxes

33. The present value of the interest tax shield is expressed as:

- A. $(T_C \times D)/R_A$.
- B. $V_U + (T_C \times D)$.
- C. $[EBIT \times (T_C \times D)]/R_U$.
- D. $[EBIT \times (T_C \times D)]/R_A$.
- E. $T_c \times D$.**

Refer to section 16.4

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: PV of interest tax shield

34. The interest tax shield has no value when a firm has a:

- I. tax rate of zero.
- II. debt-equity ratio of 1.
- III. zero debt.
- IV. zero leverage.
- A. I and III only
- B. II and IV only
- C. I, III, and IV only**
- D. II, III, and IV only
- E. I, II, and IV only

Refer to section 16.4

AACSB: N/A
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: Interest tax shield

35. The interest tax shield is a key reason why:

- A. the required rate of return on assets rises when debt is added to the capital structure.
 - B. the value of an unlevered firm is equal to the value of a levered firm.
 - C. the net cost of debt to a firm is generally less than the cost of equity.**
 - D. the cost of debt is equal to the cost of equity for a levered firm.
 - E. firms prefer equity financing over debt financing.
- Refer to section 16.4

AACSB: N/A
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: Interest tax shield

36. Based on M&M Proposition II *with taxes*, the weighted average cost of capital:

- A. is equal to the aftertax cost of debt.
- B. has a linear relationship with the cost of equity capital.
- C. is unaffected by the tax rate.
- D. decreases as the debt-equity ratio increases.**
- E. is equal to $R_U \times (1 - T_C)$.

Refer to section 16.4

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition II with taxes

37. Bankruptcy:

- A. creates value for a firm.
- B. transfers value from shareholders to bondholders.**
- C. technically occurs when total equity equals total debt.
- D. costs are limited to legal and administrative fees.
- E. is an inexpensive means of reorganizing a firm.

Refer to section 16.5

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.5
Topic: Bankruptcy

38. Which one of the following is a direct bankruptcy cost?

- A. company CEO's time spent in bankruptcy court
- B. maintaining cash reserves
- C. maintaining a debt-equity ratio that is lower than the optimal ratio
- D. losing a key company employee
- E. paying an outside accountant fees to prepare bankruptcy reports**

Refer to section 16.5

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-3

Section: 16.5

Topic: Bankruptcy costs

39. If a firm has the optimal amount of debt, then the:

- A. direct financial distress costs must equal the present value of the interest tax shield.
- B. value of the levered firm will exceed the value of the firm if it were unlevered.**
- C. value of the firm is minimized.
- D. value of the firm is equal to $V_L + T_C \times D$.
- E. debt-equity ratio is equal to 1.0.

Refer to section 16.6

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-2

Section: 16.6

Topic: Optimal capital structure

40. Which one of the following has the greatest tendency to increase the percentage of debt included in the optimal capital structure of a firm?

- A. exceptionally high depreciation expenses
- B. very low marginal tax rate
- C. substantial tax shields from other sources
- D. low probabilities of financial distress**
- E. minimal taxable income

Refer to section 16.6

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-2

Section: 16.6

Topic: Optimal capital structure

41. The capital structure that maximizes the value of a firm also:

- A. minimizes financial distress costs.
- B. minimizes the cost of capital.**
- C. maximizes the present value of the tax shield on debt.
- D. maximizes the value of the debt.
- E. maximizes the value of the unlevered firm.

Refer to section 16.6

AACSB: N/A

Bloom's: Knowledge

Difficulty: Basic

Learning Objective: 16-2

Section: 16.6

Topic: Optimal capital structure

42. The optimal capital structure:

- A. will be the same for all firms in the same industry.
- B. will remain constant over time unless the firm changes its primary operations.
- C. will vary over time as taxes and market conditions change.**
- D. places more emphasis on operations than on financing.
- E. is unaffected by changes in the financial markets.

Refer to section 16.6

AACSB: N/A

Bloom's: Comprehension

Difficulty: Basic

Learning Objective: 16-2

Section: 16.6

Topic: Optimal capital structure

43. The static theory of capital structure advocates that the optimal capital structure for a firm:

- A. is dependent on a constant debt-equity ratio over time.
- B. remains fixed over time.
- C. is independent of the firm's tax rate.
- D. is independent of the firm's weighted average cost of capital.
- E. equates the tax savings from an additional dollar of debt to the increased bankruptcy costs related to**

that additional dollar of debt.
Refer to section 16.6

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.6
Topic: Static theory of capital structure

44. The basic lesson of M&M Theory is that the value of a firm is dependent upon:
A. the firm's capital structure.
B. the total cash flow of the firm.
C. minimizing the marketed claims.
D. the amount of marketed claims to that firm.
E. size of the stockholders' claims.
Refer to section 16.7

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.7
Topic: M&M Theory

45. Which form of financing do firms prefer to use first according to the pecking-order theory?
A. regular debt
B. convertible debt
C. common stock
D. preferred stock
E. internal funds
Refer to section 16.8

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.8
Topic: Pecking-order theory

46. Which of the following are correct according to pecking-order theory?
I. Firms stockpile internally-generated cash.
II. There is an inverse relationship between a firm's profit level and its debt level.
III. Firms avoid external debt at all costs.
IV. A firm's capital structure is dictated by its need for external financing.
A. I and III only

B. II and IV only
C. I, III, and IV only
D. I, II, and IV only
E. I, II, III, and IV
Refer to section 16.8

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.8
Topic: Pecking-order theory

47. Corporations in the U.S. tend to:
A. minimize taxes.
B. underutilize debt.
C. rely less on equity financing than they should.
D. have relatively similar debt-equity ratios across industry lines.
E. rely more heavily on debt than on equity as the major source of financing.
Refer to section 16.9

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.9
Topic: Capital structure

48. In general, the capital structures used by U.S. firms:
A. tend to overweigh debt in relation to equity.
B. generally result in debt-equity ratios between 0.45 and 0.60.
C. are fairly standard for all SIC codes.
D. tend to be those which maximize the use of the firm's available tax shelters.
E. vary significantly across industries.
Refer to section 16.9

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-2
Section: 16.9
Topic: Capital structure

49. A firm is technically insolvent when:
A. it has a negative book value.

- B. total debt exceeds total equity.
- C.** it is unable to meet its financial obligations.
- D. it files for bankruptcy protection.
- E. the market value of its stock is less than its book value.

Refer to section 16.10

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Technical insolvency

50. Which one of the following statements related to Chapter 7 bankruptcy is correct?
- A. A firm in Chapter 7 bankruptcy is reorganizing its operations such that it can return to being a viable concern.
 - B.** Under a Chapter 7 bankruptcy, a trustee will assume control of the firm's assets until those assets can be liquidated.
 - C. Chapter 7 bankruptcies are always involuntary on the part of the firm.
 - D. Under a Chapter 7 bankruptcy, the claims of creditors are paid prior to the administrative costs of the bankruptcy.
 - E. Chapter 7 bankruptcy allows a firm to restructure its equity such that new shares of stock are generally issued prior to the firm coming out of bankruptcy.

Refer to section 16.10

AACSB: N/A
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Bankruptcy

51. Which one of the following will generally have the highest priority when assets are distributed in a bankruptcy proceeding?
- A. consumer claim 3
 - B. dividend payment to preferred shareholder 5
 - C. company contribution to the employees' retirement account 2
 - D. payment to an unsecured creditor 4
 - E.** payment of employee wages 1

Refer to section 16.10

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Bankruptcy

52. A firm may file for Chapter 11 bankruptcy:
- I. in an attempt to gain a competitive advantage.
 - II. using a prepack.
 - III. while allowing the current management to continue running the firm.
 - IV. only after the firm becomes insolvent.
- A. I and III only
 - B. I and II only
 - C. I, II, and IV only
 - D.** I, II, and III only
 - E. I, II, III, and IV
- Refer to section 16.10

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Bankruptcy

53. The Bankruptcy Abuse Prevention and Consumer Protection Act of 2005:
- A. permits creditors to file a prepack immediately after a firm files for bankruptcy protection.
 - B. prevents creditors from submitting any reorganization plans.
 - C. prevents firms from filing for bankruptcy protection more than once.
 - D.** permits key employee retention plans only if an employee has another job offer.
 - E. allows firms to pay bonuses to all key employees to entice those employees to remain in the firm's employ.
- Refer to section 16.10

AACSB: N/A
Bloom's: Knowledge
Difficulty: Basic
Learning Objective: 16-3
Section: 16.10
Topic: Bankruptcy

54. Kelso Electric is debating between a leveraged and an unleveraged capital structure. The all equity capital structure would consist of 40,000 shares of stock. The debt and equity option would consist of 25,000 shares of stock plus \$280,000 of debt with an interest rate of 7 percent. What is the break-even level of earnings before interest and taxes between these two options? Ignore taxes.

- A. \$42,208
- B. \$44,141
- C. \$46,333
- D. \$49,667
- E. \$52,267**

$$\text{EBIT}/40,000 = [\text{EBIT} - (\$280,000 \times 0.07)]/25,000;$$

$$\text{EBIT} = \$52,267$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.2
Topic: Break-even EBIT

55. Holly's is currently an all equity firm that has 9,000 shares of stock outstanding at a market price of \$42 a share. The firm has decided to leverage its operations by issuing \$120,000 of debt at an interest rate of 9.5 percent. This new debt will be used to repurchase shares of the outstanding stock. The restructuring is expected to increase the earnings per share. What is the minimum level of earnings before interest and taxes that the firm is expecting? Ignore taxes.

- A. \$35,910**
- B. \$38,516
- C. \$42,000
- D. \$44,141
- E. \$45,020

$$\text{EBIT}/9,000 = [\text{EBIT} - (\$120,000 \times 0.095)]/[9,000 - (\$120,000/\$42)]; \text{EBIT} = \$35,910$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.2
Topic: Break-even EBIT

56. Sewer's Paradise is an all equity firm that has

5,000 shares of stock outstanding at a market price of \$15 a share. The firm's management has decided to issue \$30,000 worth of debt and use the funds to repurchase shares of the outstanding stock. The interest rate on the debt will be 10 percent. What are the earnings per share at the break-even level of earnings before interest and taxes? Ignore taxes.

- A. \$1.46
- B. \$1.50**
- C. \$1.67
- D. \$1.88
- E. \$1.94

$$\text{Number of shares repurchased} = \$30,000/\$15 = 2,000$$

$$\text{EBIT}/5,000 = [\text{EBIT} - (\$30,000 \times .010)]/(5,000 - 2,000); \text{EBIT} = \$7,500$$

$$\text{EPS} = [\$7,500 - (\$30,000 \times 0.10)]/(5,000 - 2,000);$$

$$\text{EPS} = \$1.50$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.2
Topic: Break-even EPS

57. Miller's Dry Goods is an all equity firm with 45,000 shares of stock outstanding at a market price of \$50 a share. The company's earnings before interest and taxes are \$128,000. Miller's has decided to add leverage to its financial operations by issuing \$250,000 of debt at 8 percent interest. The debt will be used to repurchase shares of stock. You own 400 shares of Miller's stock. You also loan out funds at 8 percent interest. How many shares of Miller's stock must you sell to offset the leverage that Miller's is assuming? Assume you loan out all of the funds you receive from the sale of stock. Ignore taxes.

- A. 35.6 shares
- B. 40.0 shares
- C. 44.4 shares**
- D. 47.5 shares
- E. 50.1 shares

$$\text{Miller's interest} = \$250,000 \times 0.08 = \$20,000$$

$$\text{Miller's shares repurchased} = \$250,000/\$50 = 5,000$$

$$\text{Miller's shares outstanding with debt} = 45,000 - 5,000 = 40,000$$

Miller's EPS, no debt = $\$128,000/45,000 = \2.844444
 Miller's EPS, with debt = $(\$128,000 - \$20,000)/40,000 = \$2.70$
 Miller's value of stock = $40,000 \times \$50 = \$2,000,000$
 Miller's value of debt = $\$250,000$
 Miller's total value = $\$2,000,000 + \$250,000 = \$2,250,000$
 Miller's weight stock = $\$2,000,000/\$2,250,000 = 0.888889$
 Miller's weight debt = $\$250,000/\$2,250,000 = 0.111111$
 Your initial investment = $400 \times \$50 = \$20,000$
 Your new stock position = $0.888889 \times \$20,000 = \$17,777.78$
 Your new number of shares = $\$17,777.78/\$50 = 355.5556$
 Number of shares sold = $400 - 355.5556 = 44.4$ shares

Check:

Your new loans = $0.111111 \times \$20,000 = \$2,222.22$

Your total unlevered income = $400 \times \$2.844444 = \$1,137.78$

Your total levered income = $(355.5556 \times \$2.70) + (\$2,222.22 \times 0.08) = \$1,137.78$

AACSB: Analytic
Bloom's: Analysis
Difficulty: Intermediate
Learning Objective: 16-1
Section: 16.2
Topic: Homemade leverage

58. You currently own 600 shares of JKL, Inc. JKL is an all equity firm that has 75,000 shares of stock outstanding at a market price of \$40 a share. The company's earnings before interest and taxes are \$140,000. JKL has decided to issue \$1 million of debt at 8 percent interest. This debt will be used to repurchase shares of stock. How many shares of JKL stock must you sell to unlever your position if you can loan out funds at 8 percent interest?

- A. 120 shares
- B. 150 shares
- C. 180 shares
- D. 200 shares**

E. 250 shares

JKL interest = $\$1m \times 0.08 = \$80,000$

JKL shares repurchased = $\$1m/\$40 = 25,000$

JKL shares outstanding with debt = $75,000 - 25,000 = 50,000$

JKL EPS, no debt = $\$140,000/75,000 = \1.866667

JKL EPS, with debt = $(\$140,000 - \$80,000)/50,000 = \$1.20$

JKL value of stock = $50,000 \times \$40 = \$2m$

JKL value of debt = $\$1m$

JKL total value = $\$2m + \$1m = \$3m$

JKL weight stock = $\$2m/\$3m = 2/3$

JKL weight debt = $\$1m/\$3m = 1/3$

Your initial investment = $600 \times \$40 = \$24,000$

Your new stock position = $2/3(\$24,000) = \$16,000$

Your new number of shares = $\$16,000/\$40 = 400$

Number of shares sold = $600 - 400 = 200$ shares

Check:

Your new loans = $1/3(\$24,000) = \$8,000$

Your unlevered income = $600 \times \$1.866667 = \$1,120$

Your levered income = $(400 \times \$1.20) + (\$8,000 \times 0.08) = \$1,120$

AACSB: Analytic
Bloom's: Analysis
Difficulty: Intermediate
Learning Objective: 16-1
Section: 16.2
Topic: Homemade leverage

59. Naylor's is an all equity firm with 60,000 shares of stock outstanding at a market price of \$50 a share. The company has earnings before interest and taxes of \$87,000. Naylor's has decided to issue \$750,000 of debt at 7.5 percent. The debt will be used to repurchase shares of the outstanding stock. Currently, you own 500 shares of Naylor's stock. How many shares of Naylor's stock will you continue to own if you unlever this position? Assume you can loan out funds at 7.5 percent interest. Ignore taxes.

- A. 300 shares
- B. 350 shares
- C. 375 shares**
- D. 425 shares

E. 500 shares

Naylor's interest = $\$750,000 \times 0.075 = \$56,250$

Naylor's shares repurchased = $\$750,000 / \$50 = 15,000$

Naylor's shares outstanding with debt = $60,000 - 15,000 = 45,000$

Naylor's EPS, no debt = $\$87,000 / 60,000 = \1.45

Naylor's EPS, with debt = $(\$87,000 - \$56,250) / 45,000 = \$0.683333$

Naylor's value of stock = $45,000 \times \$50 = \$2,250,000$

Naylor's value of debt = $\$750k$

Naylor's total value = $\$2,250,000 + \$750,000 = \$3,000,000$

Naylor's weight stock = $\$2,250,000 / \$3,000,000 = 0.75$

Naylor's weight debt = $\$750,000 / \$3,000,000 = 0.25$

Your initial investment = $500 \times \$50 = \$25,000$

Your new stock position = $0.75 \times \$25,000 = \$18,750$

Your new number of shares = $\$18,750 / \$50 = 375$ shares

Check:

Your new loans = $0.25 \times \$25,000 = \$6,250$

Your unlevered income = $500 \times \$1.45 = \725

Your levered income = $(375 \times \$0.683333) + (\$6,250 \times 0.075) = \$725$

*AACSB: Analytic
Bloom's: Analysis
Difficulty: Intermediate
Learning Objective: 16-1
Section: 16.2
Topic: Homemade leverage*

60. Pewter & Glass is an all equity firm that has 80,000 shares of stock outstanding. The company is in the process of borrowing \$600,000 at 9 percent interest to repurchase 12,000 shares of the outstanding stock. What is the value of this firm if you ignore taxes?

A. \$2.5 million

B. \$4.0 million

C. \$5.0 million

D. \$5.5 million

E. \$6.0 million

Firm value = $80,000 \times (\$600,000 / 12,000) = \4 million

*AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: Firm value*

61. The Jean Outlet is an all equity firm that has 146,000 shares of stock outstanding. The company has decided to borrow the \$1.1 million to repurchase 7,500 shares of its stock from the estate of a deceased shareholder. What is the total value of the firm if you ignore taxes?

A. \$18,387,702

B. \$18,500,000

C. \$19,666,667

D. \$21,000,000

E. \$21,413,333

Firm value = $146,000 \times (\$1.1m / 7,500) = \$21,413,333$

*AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: Firm value*

62. Stacy owns 38 percent of The Town Centre. She has decided to retire and wants to sell all of her shares in this closely held, all equity firm. The other shareholders have agreed to have the firm borrow \$650,000 to purchase her shares of stock. What is the total market value of The Town Centre? Ignore taxes.

A. \$1,710,526

B. \$1,748,219

C. \$1,771,089

D. \$1,801,406

E. \$1,808,649

Firm value = $\$650,000 / 0.38 = \$1,710,526$

*AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3*

Topic: Firm value

63. Winter's Toyland has a debt-equity ratio of 0.72. The pre-tax cost of debt is 8.7 percent and the required return on assets is 16.1 percent. What is the cost of equity if you ignore taxes?

- A. 19.31 percent
- B. 19.74 percent
- C. 20.29 percent
- D. 20.46 percent
- E. 21.43 percent**

$$R_E = 0.161 + (0.161 - 0.087) \times 0.72 = 21.43 \text{ percent}$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: M&M Proposition II

64. Jefferson & Daughter has a cost of equity of 14.6 percent and a pre-tax cost of debt of 7.8 percent. The required return on the assets is 13.2 percent. What is the firm's debt-equity ratio based on M&M II with no taxes?

- A. 0.26**
- B. 0.33
- C. 0.37
- D. 0.43
- E. 0.45

$$R_E = 0.146 = 0.132 + (0.132 - 0.078) \times D/E; D/E = 0.26$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: M&M Proposition II

65. The Corner Bakery has a debt-equity ratio of 0.54. The firm's required return on assets is 14.2 percent and its cost of equity is 16.1 percent. What is the pre-tax cost of debt based on M&M Proposition II with no taxes?

- A. 7.10 percent
- B. 8.79 percent
- C. 10.68 percent**
- D. 17.56 percent

E. 18.40 percent

$$R_E = 0.161 = 0.142 + (0.142 - R_d) \times 0.54; R_d = 10.68 \text{ percent}$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-1
Section: 16.3
Topic: M&M Proposition II

66. L.A. Clothing has expected earnings before interest and taxes of \$48,900, an unlevered cost of capital of 14.5 percent, and a tax rate of 34 percent. The company also has \$8,000 of debt that carries a 7 percent coupon. The debt is selling at par value. What is the value of this firm?

- A. \$222,579.31
- B. \$223,333.33
- C. \$224,108.16
- D. \$225,299.31**
- E. \$225,476.91

$$V_U = [\$48,900 \times (1 - 0.34)] / 0.145 = \$222,579.31$$

$$V_L = \$222,579.31 + 0.34 (\$8,000) = \$225,299.31$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition I with taxes

67. Hanover Tech is currently an all equity firm that has 320,000 shares of stock outstanding with a market price of \$19 a share. The current cost of equity is 15.4 percent and the tax rate is 36 percent. The firm is considering adding \$1.2 million of debt with a coupon rate of 8 percent to its capital structure. The debt will be sold at par value. What is the levered value of the equity?

- A. \$5.209 million
- B. \$5.312 million**
- C. \$5.436 million
- D. \$6.512 million
- E. \$6.708 million

$$V_L = (320,000 \times \$19) + (0.36 \times \$1.2\text{m}) = \$6.512\text{m}$$

$$V_E = \$6.512\text{m} - \$1.2\text{m} = \$5.312\text{m}$$

AACSB: Analytic
 Bloom's: Application
 Difficulty: Basic
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition I with taxes

68. Bright Morning Foods has expected earnings before interest and taxes of \$48,600, an unlevered cost of capital of 13.2 percent, and debt with both a book and face value of \$25,000. The debt has an 8.5 percent coupon. The tax rate is 34 percent. What is the value of the firm?

- A. \$245,500
- B. \$247,600
- C. \$251,500**
- D. \$264,800
- E. \$271,300

$$V_U = [\$48,600 \times (1 - 0.34)] / 0.132 = \$243,000$$

$$V_L = \$243,000 + (0.34 \times \$25,000) = \$251,500$$

AACSB: Analytic
 Bloom's: Application
 Difficulty: Basic
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition I with taxes

69. Exports Unlimited is an unlevered firm with an aftertax net income of \$47,800. The unlevered cost of capital is 14.1 percent and the tax rate is 32 percent. What is the value of this firm?

- A. \$270,867
- B. \$294,380
- C. \$339,007**
- D. \$378,444
- E. \$447,489

$$V_U = \$47,800 / 0.141 = \$339,007$$

AACSB: Analytic
 Bloom's: Application
 Difficulty: Basic
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition I with taxes

70. An unlevered firm has a cost of capital of 17.5 percent and earnings before interest and taxes of \$327,500. A levered firm with the same operations and assets has both a book value and a face value of

debt of \$650,000 with a 7.5 percent annual coupon. The applicable tax rate is 38 percent. What is the value of the levered firm?

- A. \$1,397,212
- B. \$1,398,256
- C. \$1,402,509
- D. \$1,407,286**
- E. \$1,414,414

$$V_U = [\$327,500 \times (1 - 0.38)] / 0.175 = \$1,160,285.71$$

$$V_L = \$1,160,285.71 + 0.38(\$650k) = \$1,407,286$$

AACSB: Analytic
 Bloom's: Application
 Difficulty: Basic
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition I with taxes

71. Down Bedding has an unlevered cost of capital of 13 percent, a cost of debt of 7.8 percent, and a tax rate of 32 percent. What is the target debt-equity ratio if the targeted cost of equity is 15.51 percent?

- A. .63
- B. .68
- C. .71**
- D. .76
- E. .84

$$R_E = 0.1551 = 0.13 + (0.13 - 0.078) \times D/E \times (1 - 0.32); D/E = 0.71$$

AACSB: Analytic
 Bloom's: Application
 Difficulty: Basic
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition II with taxes

72. Johnson Tire Distributors has debt with both a face and a market value of \$12,000. This debt has a coupon rate of 6 percent and pays interest annually. The expected earnings before interest and taxes are \$2,100, the tax rate is 30 percent, and the unlevered cost of capital is 11.7 percent. What is the firm's cost of equity?

- A. 22.46 percent
- B. 22.87 percent
- C. 23.20 percent**
- D. 23.59 percent
- E. 25.14 percent

$$V_U = [\$2,100 \times (1 - 0.30)] / 0.117 = \$12,564.10$$

$$V_L = \$12,564.10 + (0.30 \times \$12,000) = \$16,164.10$$

$$V_E = \$16,164.10 - \$12,000 = \$4,164.10$$

$$R_E = 0.117 + [(0.117 - 0.06) \times (\$12,000 / \$4,164.10) \times (1 - 0.30)] = 23.20 \text{ percent}$$

AACSB: Analytic
 Bloom's: Analysis
 Difficulty: Intermediate
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition II with taxes

73. Country Markets has an unlevered cost of capital of 12 percent, a tax rate of 38 percent, and expected earnings before interest and taxes of \$15,700. The company has \$11,000 in bonds outstanding that have a 6 percent coupon and pay interest annually. The bonds are selling at par value. What is the cost of equity?

- A.** 12.55 percent
- B. 13.36 percent
- C. 13.64 percent
- D. 14.07 percent
- E. 14.29 percent

$$V_U = [\$15,700 \times (1 - 0.38)] / 0.12 = \$81,116.67$$

$$V_L = \$81,116.67 + (0.38 \times \$11,000) = \$85,296.67$$

$$V_E = \$85,296.67 - \$11,000 = \$74,296.67$$

$$R_E = 0.12 + [(0.12 - 0.06) \times (\$11,000 / \$74,296.67) \times (1 - 0.38)] = 12.55 \text{ percent}$$

AACSB: Analytic
 Bloom's: Analysis
 Difficulty: Intermediate
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition II with taxes

74. The Pizza Palace has a cost of equity of 15.3 percent and an unlevered cost of capital of 11.8 percent. The company has \$22,000 in debt that is selling at par value. The levered value of the firm is \$41,000 and the tax rate is 34 percent. What is the pre-tax cost of debt?

- A. 4.73 percent
- B. 6.18 percent
- C. 6.59 percent
- D.** 7.22 percent

E. 9.92 percent

$$R_E = 0.153 = 0.118 + (0.118 - R_D) \times [\$22,000 / (\$41,000 - \$22,000)] \times (1 - 0.34);$$

$$R_D = 7.22 \text{ percent}$$

AACSB: Analytic
 Bloom's: Application
 Difficulty: Basic
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition II with taxes

75. The Green Paddle has a cost of equity of 13.73 percent and a pre-tax cost of debt of 7.6 percent. The debt-equity ratio is 0.65 and the tax rate is 32 percent. What is Green Paddle's unlevered cost of capital?

- A.** 11.85 percent
- B. 12.78 percent
- C. 14.29 percent
- D. 14.46 percent
- E. 15.08 percent

$$R_E = 0.1373 = R_U + (R_U - 0.076) \times 0.65 \times (1 - 0.32);$$

$$R_U = 11.85 \text{ percent}$$

AACSB: Analytic
 Bloom's: Application
 Difficulty: Basic
 Learning Objective: 16-2
 Section: 16.4
 Topic: M&M Proposition II with taxes

76. Bob's Warehouse has a pre-tax cost of debt of 8.4 percent and an unlevered cost of capital of 14.6 percent. The firm's tax rate is 37 percent and the cost of equity is 18 percent. What is the firm's debt-equity ratio?

- A. 0.72
- B. 0.76
- C. 0.79
- D. 0.82
- E.** 0.87

$$R_E = 0.18 = 0.146 + (0.146 - 0.084) \times D/E \times (1 - 0.37); D/E = 0.87$$

AACSB: Analytic
 Bloom's: Application
 Difficulty: Basic
 Learning Objective: 16-2
 Section: 16.4

Topic: M&M Proposition II with taxes

77. Douglass & Frank has a debt-equity ratio of 0.45. The pre-tax cost of debt is 7.6 percent while the unlevered cost of capital is 13.3 percent. What is the cost of equity if the tax rate is 39 percent?

- A. 13.79 percent
- B. 14.86 percent**
- C. 15.92 percent
- D. 18.40 percent
- E. 18.87 percent

$$R_E = 0.133 + (0.133 - 0.076) \times 0.45 \times (1 - 0.39) = 14.86 \text{ percent}$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition II with taxes

78. The June Bug has a \$270,000 bond issue outstanding. These bonds have a 7.5 percent coupon, pay interest semiannually, and have a current market price equal to 98.6 percent of face value. The tax rate is 39 percent. What is the amount of the annual interest tax shield?

- A. \$3,948.75
- B. \$4,112.60
- C. \$5,311.22
- D. \$7,897.50**
- E. \$8,225.20

$$\text{Annual interest tax shield} = \$270,000 \times 0.075 \times 0.39 = \$7,897.50$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: Interest tax shield

79. Georga's Restaurants has 4,500 bonds outstanding with a face value of \$1,000 each and a coupon rate of 8.25 percent. The interest is paid semi-annually. What is the amount of the annual interest tax shield if the tax rate is 37 percent?

- A. \$137,362.50**
- B. \$162,411.90

- C. \$187,750.00
- D. \$210,420.00
- E. \$233,887.50

$$\text{Annual interest tax shield} = 4,500 \times \$1,000 \times 0.0825 \times 0.37 = \$137,362.50$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: Interest tax shield

80. D. L. Tuckers has \$21,000 of debt outstanding that is selling at par and has a coupon rate of 7.5 percent. The tax rate is 32 percent. What is the present value of the tax shield?

- A. \$504
- B. \$615
- C. \$644
- D. \$6,200
- E. \$6,720**

$$\text{Present value of the tax shield} = 0.32 \times \$21,000 = \$6,720$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: PV of tax shield

81. Jemisen's has expected earnings before interest and taxes of \$6,200. Its unlevered cost of capital is 13 percent and its tax rate is 34 percent. The firm has debt with both a book and a face value of \$2,500. This debt has a 9 percent coupon and pays interest annually. What is the firm's weighted average cost of capital?

- A. 12.48 percent
- B. 12.66 percent**
- C. 13.87 percent
- D. 14.14 percent
- E. 14.37 percent

$$V_U = [\$6,200 \times (1 - 0.34)] / 0.13 = \$31,476.92$$

$$V_L = \$31,476.92 + (0.34 \times \$2,500) = \$32,326.92$$

$$V_E = \$32,326.92 - \$2,500 = \$29,826.92$$

$$R_E = 0.13 + (0.13 - 0.09) \times (\$2,500 / \$29,826.92) \times$$

$$(1 - 0.34) = 0.132213$$

$$\text{WACC} = [(\$29,826.92/\$32,326.92) \times 0.132213] + [(\$2,500/\$32,326.92) \times 0.09 \times (1 - 0.34)] = 12.66 \text{ percent}$$

AACSB: Analytic
Bloom's: Analysis
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: WACC

82. A firm has debt of \$12,000, a leveraged value of \$26,400, a pre-tax cost of debt of 9.20 percent, a cost of equity of 17.6 percent, and a tax rate of 37 percent. What is the firm's weighted average cost of capital?

- A. 11.47 percent
- B. 11.52 percent
- C. 11.69 percent
- D. 12.23 percent**
- E. 12.48 percent

$$\text{WACC} = \{[(\$26,400 - \$12,000)/\$26,400] \times 0.176\} + [(\$12,000/\$26,400) \times 0.092 \times (1 - 0.37)] = 12.23 \text{ percent}$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: WACC

83. Young's Home Supply has a debt-equity ratio of 0.80. The cost of equity is 14.5 percent and the aftertax cost of debt is 4.9 percent. What will the firm's cost of equity be if the debt-equity ratio is revised to 0.75?

- A. 10.89 percent
- B. 11.47 percent
- C. 11.70 percent
- D. 13.89 percent
- E. 14.23 percent**

$$\text{WACC} = [(1.0/1.8) \times 0.145] + [(0.8/1.8) \times 0.049] = 0.102333;$$

$$\text{WACC} = 0.102333 = [(1.0/1.75) \times R_E] + [(0.75/1.75) \times 0.049; R_E = 14.23 \text{ percent}]$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: WACC

84. Percy's Wholesale Supply has earnings before interest and taxes of \$106,000. Both the book and the market value of debt is \$170,000. The unlevered cost of equity is 15.5 percent while the *pre-tax cost of debt* is 8.6 percent. The tax rate is 38 percent. What is the firm's weighted average cost of capital?

- A. 11.94 percent
- B. 12.65 percent
- C. 13.45 percent**
- D. 14.01 percent
- E. 14.37 percent

$$V_U = [\$106,000 \times (1 - 0.38)]/0.155 = \$424,000$$

$$V_L = \$424,000 + (0.38 \times \$170,000) = \$488,600$$

$$V_E = \$488,600 - \$170,000 = \$318,600$$

$$R_E = 0.155 + (0.155 - 0.086) \times (\$170,000/\$318,600) \times (1 - 0.38) = 0.177827$$

$$\text{WACC} = [(\$318,600/\$488,600) \times 0.177827] + [(\$170,000/\$488,600) \times 0.086 \times (1 - 0.38)] = 13.45 \text{ percent}$$

AACSB: Analytic
Bloom's: Analysis
Difficulty: Basic
Learning Objective: 16-2
Section: 16.4
Topic: WACC

Essay Questions

85. Draw the following two graphs, one above the other: In the top graph, plot firm value on the vertical axis and total debt on the horizontal axis. Use this graph to illustrate the value of a firm under M&M without taxes, M&M with taxes, and the static theory of capital structure. On the lower graph, plot the WACC on the vertical axis and the debt-equity ratio on the horizontal axis. Use this second graph to illustrate the value of the firm's WACC under M&M without taxes, M&M with

taxes, and the static theory. Briefly explain what the two graphs reveal about firm value and its cost of capital under the three different theories.

The student should replicate and explain Figure 16.8 from the text.

Feedback: Refer to section 16.6

AACSB: Reflective thinking
Bloom's: Analysis
Difficulty: Basic
Learning Objective: 16-2
Section: 16.6
Topic: M&M Propositions

86. Based on the M&M propositions with and without taxes, how much time should a financial manager spend analyzing the capital structure of a firm? What if the analysis is based on the static theory?

Under either M&M scenario, a financial manager should not spend time analyzing the firm's capital structure. With no taxes, capital structure is irrelevant. With taxes, M&M says a firm will maximize its value by using 100 percent debt. In both cases, the manager has nothing to decide. With the static theory, however, the manager must determine the optimal amount of debt and equity by analyzing the tradeoff between the benefits of the interest tax shield versus the financial distress costs. Finding the optimal capital structure is challenging in this case.

Feedback: Refer to sections 16.3 and 16.4

AACSB: Reflective thinking
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-2
Section: 16.3 and 16.4
Topic: Capital structure

87. Pete is the CFO of Dexter International. He would like to increase the debt-equity ratio of the firm but is concerned that the firm's shareholders may not be willing to accept additional financial leverage. Pete has come to you for advice. What is your recommendation?

The capital structure of the firm is irrelevant to the

shareholders because they can use homemade leverage to adjust their exposure to financial leverage to whatever level they prefer. Thus, Pete can increase the debt-equity ratio of the firm if he feels it is in the best interest of the firm to do so.

Feedback: Refer to section 16.2

AACSB: Reflective thinking
Bloom's: Comprehension
Difficulty: Basic
Learning Objective: 16-1
Section: 16.2
Topic: Homemade leverage

88. In each of the theories of capital structure, the cost of equity increases as the amount of debt increases. So why don't financial managers use as little debt as possible to keep the cost of equity down? After all, aren't financial managers supposed to maximize the value of a firm?

This question requires students to differentiate between the cost of equity and the weighted average cost of capital. In fact, it gets to the essence of capital structure theory: the firm trades off higher equity costs for lower debt costs. The shareholders benefit (to a point, according to the static theory) because their investment in the firm is leveraged, enhancing the return on their investment. Thus, even though the cost of equity rises, the overall cost of capital declines (again, up to a point according to the static theory) and firm value rises.

Feedback: Refer to section 16.6

AACSB: Reflective thinking
Bloom's: Analysis
Difficulty: Intermediate
Learning Objective: 16-2
Section: 16.6
Topic: WACC

89. Explain how a firm loses value during the bankruptcy process from both a creditors and a shareholders perspective.

The bankruptcy process is a legal proceeding that either liquidates or reorganizes a firm. Under either situation, legal, accounting, and other administrative fees are incurred. These fees, which are frequently

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capital structures, an all-equity plan (Plan I) and a levered plan (Plan II). Under Plan I, Galaxy would have 178,500 shares of stock outstanding. Under Plan II, there would be 71,400 shares of stock outstanding and \$1.79 million in debt outstanding. The interest rate on the debt is 10 percent and there are no taxes. What is the breakeven EBIT?

- A. \$287,878.78
 - B. \$298,333.33**
 - C. \$351,111.11
 - D. \$333,333.33
 - E. \$341,414.14
- EBIT/178,500 = [EBIT - 0.10(\$1,790,000)]/71,400;
EBIT = \$298,333.33

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
EOC #: 16-4
Learning Objective: 16-1
Section: 16.2
Topic: Break-even EBIT

93. ABC Co. and XYZ Co. are identical firms in all respects except for their capital structure. ABC is all equity financed with \$480,000 in stock. XYZ uses both stock and perpetual debt; its stock is worth \$240,000 and the interest rate on its debt is 11 percent. Both firms expect EBIT to be \$58,400.

Ignore taxes. The cost of equity for ABC is _____ percent, and for XYZ it is _____ percent.

- A. 12.17; 12.68
- B. 12.17; 12.94
- C. 12.17; 13.33**
- D. 12.29; 12.68
- E. 12.29; 13.33

ABC: $R_E = R_A = \$58,400 / \$480,000 = 12.17$ percent

XYZ: $R_E = 0.1217 + (0.1217 - 0.11)(1) = 13.33$

percent

Note: ABC: Equity = \$480,000

XYZ: Equity = \$240,000; Debt = \$480,000 - \$240,000 = \$240,000

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
EOC #: 16-9
Learning Objective: 16-1
Section: 16.3
Topic: Cost of equity

94. Lamont Corp. uses *no debt*. The weighted average cost of capital is 11 percent. The current market value of the equity is \$38 million and there are no taxes. What is EBIT?

- A. \$3,423,000
- B. \$3,508,600
- C. \$3,781,100
- D. \$3,898,700
- E. \$4,180,000**

$V = \$38,000,000 = \text{EBIT} / 0.11$; EBIT = \$4,180,000

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
EOC #: 16-10
Learning Objective: 16-1
Section: 16.3
Topic: M&M Proposition I with no tax

95. The SLG Corp. uses *no debt*. The weighted average cost of capital is 12 percent. The current market value of the equity is \$31 million and the corporate tax rate is 34 percent. What is EBIT?

- A. \$4,180,000
- B. \$4,821,194
- C. \$5,636,364**
- D. \$6,230,018
- E. \$6,568,500

$V_U = \$31,000,000 = \text{EBIT} (1 - 0.34) / 0.12$; EBIT = \$5,636,364

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
EOC #: 16-11
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition I with taxes

96. W.V. Trees, Inc. has a *debt-equity ratio of 1.4*. Its WACC is 10 percent, and its cost of debt is 9 percent. The corporate tax rate is 33 percent. What is the firm's unlevered cost of equity capital?

- A. 12.38 percent**
- B. 12.79 percent
- C. 13.68 percent
- D. 14.10 percent
- E. 14.45 percent

$\text{WACC} = 0.10 = (1/2.4) R_E + (1.4/2.4) (0.09) (1 -$

$$0.33); R_E = 0.15558$$

$$R_E = 0.15558 = R_U + (R_U - 0.09)(1.4)(1 - 0.33); R_U = 12.38 \text{ percent}$$

AACSB: Analytic
Bloom's: Analysis
Difficulty: Basic
EOC #: 16-12
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition II with taxes

97. Bruce & Co. expects its EBIT to be \$100,000 every year forever. The firm can borrow at 10 percent. Bruce currently has no debt, and its cost of equity is 20 percent. The tax rate is 31 percent. What will the value of Bruce & Co. be if the firm borrows \$54,000 and uses the loan proceeds to repurchase shares?

- A. \$280,130
- B. \$346,600
- C. \$361,740**
- D. \$378,900
- E. \$381,520

$$V_U = \$100,000 (1 - 0.31)/0.20; V = \$345,000$$

$$V_L = \$345,000 + 0.31(\$54,000) = \$361,740$$

AACSB: Analytic
Bloom's: Application
Difficulty: Basic
EOC #: 16-14
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition I with taxes

98. Bruce & Co. expects its EBIT to be \$100,000 every year forever. The firm can borrow at 11 percent. Bruce currently has no debt, and its cost of equity is 18 percent. The tax rate is 31 percent. Bruce will borrow \$61,000 and use the proceeds to repurchase shares. What will the WACC be after recapitalization?

- A. 16.30 percent
- B. 16.87 percent
- C. 17.15 percent**
- D. 18.29 percent
- E. 18.86 percent

$$V_U = \$100,000(1 - 0.31)/0.18 = \$383,333.33$$

$$V_L = \$383,333.33 + 0.31(\$61,000) = \$402,243.33$$

$$R_E = 0.18 + (0.18 - 0.11)(\$61,000/\$402,243.33 -$$

$$\$61,000)(1 - 0.31) = 0.1886$$

$$WACC = 0.1886(\$402,243.33 - \$61,000)/$$

$$\$402,243.33 + 0.11(\$61,000/\$402,243.33) (1 - 0.31)$$

$$= 17.15 \text{ percent}$$

AACSB: Analytic
Bloom's: Analysis
Difficulty: Basic
EOC #: 16-15
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition II with taxes and WACC

99. New Schools, Inc. expects an EBIT of \$7,000 every year forever. The firm currently has no debt, and its cost of equity is 17 percent. The firm can borrow at 8 percent and the corporate tax rate is 34 percent. What will the value of the firm be if it converts to 50 percent debt?

- A. \$29,871.17
- B. \$31,796.47**
- C. \$32,407.16
- D. \$34,552.08
- E. \$37,119.30

$$V_U = \$7,000 (1 - 0.34)/0.17 = \$27,176.47$$

$$V_L = \$27,176.47 + 0.34 (0.50) (\$27,176.47) =$$

$$\$31,796.47$$

Note: When levered, the value of debt is equal to one-half of the unlevered value of the firm.

AACSB: Analytic
Bloom's: Analysis
Difficulty: Intermediate
EOC #: 16-17
Learning Objective: 16-2
Section: 16.4
Topic: M&M Proposition I with taxes