1. Which of the following statements most correctly identifies the payoff of a call option?
   a. The maximum of either the stock price minus the exercise price or zero.
   b. The maximum of either the exercise price minus the stock price or zero.
   c. The difference between the price a stock is sold for and the price paid for the stock.
   d. The difference between the price received from the short sell of a stock and the price the stock is bought back for.
   e. The hedge ratio times current price of a stock minus the present value of the exercise price (discounted at the risk-free rate).

2. Which of the following statements is most correct?
   a. Prior to expiration, the market value of an option must exceed the formula value.
   b. Prior to expiration, the market value of an option must be greater than or equal to the formula value.
   c. Prior to expiration, the formula value of an option must exceed the market value.
   d. Prior to expiration, the formula value of an option must be greater than or equal to the market value.
   e. At expiration, the market value of an option will exceed the formula value.

3. The value of an option depends on the stock's price, the risk-free rate, and the
   a. Exercise price.
   b. Variability of the stock price.
   c. Option's time to maturity.
   d. All of the above.
   e. None of the above.

4. You have developed the following data on three stocks:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Standard Deviation</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.15</td>
<td>0.79</td>
</tr>
<tr>
<td>B</td>
<td>0.25</td>
<td>0.61</td>
</tr>
<tr>
<td>C</td>
<td>0.20</td>
<td>1.29</td>
</tr>
</tbody>
</table>

   If you are a risk minimizer, you should 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; A
   d. C; A
   e. C; B
5. You hold a diversified portfolio consisting of a $10,000 investment in each of 20 different common stocks (i.e., your total investment is $200,000). The portfolio beta is equal to 1.2. You have decided to sell one of your stocks that has a beta equal to 0.7 for $10,000. You plan to use the proceeds to purchase another stock that has a beta equal to 1.4. What will be the beta of the new portfolio?

a. 1.165
b. 1.235
c. 1.250
d. 1.284
e. 1.333

6. A money manager is managing the account of a large investor. The investor holds the following stocks:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Amount Invested</th>
<th>Estimated Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$2,000,000</td>
<td>0.80</td>
</tr>
<tr>
<td>B</td>
<td>5,000,000</td>
<td>1.10</td>
</tr>
<tr>
<td>C</td>
<td>3,000,000</td>
<td>1.40</td>
</tr>
<tr>
<td>D</td>
<td>5,000,000</td>
<td>???</td>
</tr>
</tbody>
</table>

The portfolio's required rate of return is 17 percent. The risk-free rate is 7 percent and the return on the market is 14 percent. What is Stock D's estimated beta?

a. 1.256
b. 1.389
c. 1.429
d. 2.026
e. 2.154

7. Other things held constant, (1) if the expected inflation rate increases, and (2) investors become less risk averse, the Security Market Line would shift

a. Down and have a steeper slope.
b. Up and have a less steep slope.
c. Up and keep the same slope.
d. Down and keep the same slope.
e. Down and have a less steep slope.
8. Which of the following statements is most correct?

   a. Portfolio diversification reduces the variability of the returns on the individual stocks held in the portfolio.
   b. If an investor buys enough stocks, he or she can, through diversification, eliminate virtually all of the nonmarket (or company-specific) risk inherent in owning stocks. Indeed, if the portfolio contained all publicly traded stocks, it would be riskless.
   c. The required return on a firm's common stock is determined by its systematic (or market) risk. If the systematic risk is known, and if that risk is expected to remain constant, then no other information is required to specify the firm's required return.
   d. A security's beta measures its nondiversifiable (systematic, or market) risk relative to that of an average stock.
   e. A stock's beta is less relevant as a measure of risk to an investor with a well-diversified portfolio than to an investor who holds only that one stock.

9. The Security Market Line (SML) relates risk to return, for a given set of financial market conditions. If the general level of risk aversion among investors suddenly increases, which of the following changes would be most likely to occur?

   a. The market risk premium would decrease.
   b. Beta would decrease.
   c. The SML would shift upward, but the slope of the SML would remain unchanged.
   d. The required return on the market portfolio (kM) would increase.
   e. None of the indicated changes would be likely to occur.

10. Which of the following correctly ranks the after-tax component costs of capital from the least to the greatest in magnitude?

    a. Debt, preferred stock, common equity.
    b. Debt, common equity, preferred stock.
    c. Preferred stock, debt, common equity.
    d. Preferred stock, common equity, debt.
    e. Common equity preferred stock, debt.

11. Which of the following cost of capital factors can firms not control?

    a. Capital structure policy
    b. Investment policy
    c. Interest rate levels
    d. Dividend policy
    e. The firm can control all of the above factors.
12. Schubert Technologies has two divisions of equal size. Division A has a beta of 0.9, while Division B has a beta of 1.5. Schubert has no debt, and is completely equity-financed. The real risk-free rate is 6%, and the market risk premium is 5%. Schubert performs proper risk adjustment on projects according to their risk. In other words, projects in Division A are discounted at A's required return, and Division B's projects are discounted at B's required return. Which of the following statements is most correct?

a. Division B has a lower cost of capital than does Division A.
b. All else equal, Division B's required return would increase by a greater amount than would Division A's required return if the risk-free rate increased by 1%.
c. If the firm used a composite WACC for both divisions, this would result in too many Division B projects being accepted and too few Division A projects being accepted.
d. The overall composite WACC must be less than 12%, because the cost of debt (which is not given in the problem) must be less than that of the cost of equity.
e. Division B has more stand-alone risk than does Division A.

13. Which of the following is likely to occur if a company fails to properly risk adjust its hurdle rates of divisions with varying levels of risk?

a. The company will tend to accept too many risky projects.
b. The company will tend to reject too many risky projects.
c. The overall value of the firm will tend to increase.
d. The overall risk of the firm will tend to decrease.
e. None of the above are correct.

14. A firm's CFO wants to estimate the firm's WACC, and has compiled the following information:

- The firm's capital structure consists of 60% equity and 40% debt.
- The firm has bonds outstanding yield 8.75%.
- The real-risk free rate is 5%.
- The market risk premium is 6%.
- The firm's beta is 1.4.
- The firm's tax rate is 40%.

The firm uses the CAPM to estimate the cost of equity in the calculation of the cost of capital. What is the firm's weighted average cost of capital (WACC)?

a. 9.44%
b. 9.76%
c. 10.14%
d. 11.54%
e. 12.02%
15. Assuming that the yield to maturity on any new bonds issued today is equal to the yield to maturity on existing bonds, calculate Jackson's current cost of debt (kd) to be used in the calculation of the company's weighted average cost of capital:

a. 8.14 percent.
b. 9.00 percent.
c. 10.88 percent.
d. 12.75 percent.
e. There is not enough information given to answer this question.

16. Regardless of your answer to the question 17, assuming that the current cost of new debt to Jackson is 12 percent, calculate Jackson's weighted average cost of capital (round to the nearest whole number):

a. 9 percent.
b. 11 percent.
c. 13 percent.
d. 15 percent.
e. 17 percent.

USE THE INFORMATION BELOW TO ANSWER THE FOLLOWING 2 QUESTIONS

The KaoDys Sports Company purchased a machine 3 years ago at a cost of $400,000. The machine had an expected life of 8 years at the time of purchase. It is being depreciated by the straight-line method toward a salvage value of $30,000. A new machine can be purchased for $560,000; it will require modification costs of $20,000 and installation and delivery costs will be $20,000. During its 5-year life, this new machine is expected to lead to an increase in sales revenues of $300,000 per year. Cash operating expenses are expected to increase by $100,000 per year. At the end of its useful life, the machine is estimated to be worth $10,000. The machine will be depreciated according to the 3-year MACRS schedule (33%, 45%, 15%, and 7% for years 1, 2, 3, and 4 respectively). The old machine can be sold today for $140,000. The firm estimates that the old machine could be sold 5 years from today for $50,000. The firm estimates that the new machine will require/cause the following working capital changes: inventories will decrease by $4,000, accounts receivable will decrease by $8,000, and accounts payable will decrease by $3,000. The firm's tax rate is 40 percent. The appropriate discount rate is 16 percent.
17. What is the Year 0 net cash flow?
   a. $499,500
   b. $420,500
   c. $407,000
   d. $402,500
   e. $396,500

18. What is the year 2 operating net cash flow?
   a. $228,000
   b. $242,000
   c. $207,000
   d. $209,500
   e. None of the choices above are with $100 of the correct answer.

19. What is the final year (i.e., year 5) non-operating cash flow?
   a. -$45,000
   b. -$98,500
   c. -$74,500
   d. -$56,500
   e. None of the choices above are with $100 of the correct answer.

20. Other things held constant, which of the following would increase the NPV of a project being considered?
   a. A shift from MACRS to straight-line depreciation.
   b. Making the initial investment in the first year rather than spreading it over the first 3 years.
   c. A decrease in the discount rate associated with the project.
   d. The sale of the old machine in a replacement decision at a capital loss rather than at book value.
   e. An increase in required working capital.
21. Given the following information, what is the required cash outflow associated with the acquisition of a new machine; that is, in a project analysis, what is the cash outflow at \( t = 0 \)?

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase price of new machine</td>
<td>$8,000</td>
</tr>
<tr>
<td>Installation charge</td>
<td>2,000</td>
</tr>
<tr>
<td>Market value of old machine</td>
<td>2,000</td>
</tr>
<tr>
<td>Book value of old machine</td>
<td>1,000</td>
</tr>
<tr>
<td>Inventory decrease if new machine is installed</td>
<td>1,000</td>
</tr>
<tr>
<td>Accounts payable increase if new machine is installed</td>
<td>500</td>
</tr>
<tr>
<td>Tax rate</td>
<td>34%</td>
</tr>
<tr>
<td>Cost of capital</td>
<td>15%</td>
</tr>
</tbody>
</table>

- \(-8,980\)
- \(-6,460\)
- \(-5,200\)
- \(-6,840\)
- \(-12,020\)

22. Regarding the net present value of a replacement decision, which of the following statements is false?

a. The present value of the after-tax cost reduction benefits resulting from the new investment is treated as an inflow.

b. The after-tax market value of the old equipment is treated as an inflow at \( t = 0 \).

c. The present value of depreciation expenses on the new equipment, multiplied by the tax rate, is treated as an inflow.

d. Any loss on the sale of the old equipment is multiplied by the tax rate and is treated as an outflow at \( t = 0 \).

e. An increase in net operating working capital is treated as an outflow when the project begins and as an inflow when the project ends.

23. Which of the following statements most correctly describes the factors that influence capital structure decisions?

a. The greater the business risk, the higher the optimal debt ratio will be.

b. Large depreciation tax shields and tax-loss carry-forwards will make it more advantageous for firms to assume more debt.

c. If a firm is run by a very aggressive manager, he/she may be more inclined to use debt to bolster profits, and hence raising the optimal debt level.

d. The major reason firms limit the use of debt is that interest is tax-deductible, which raises the effective cost of debt.

e. The higher the probability of future capital needs and the worse the consequences of a capital shortage, the stronger the balance sheet should be.
24. Friess Associates, Inc. has $4,000,000 in assets, and currently has no debt. It is financed entirely with 300,000 shares of common stock, each of which trades at $15 per share. The firm's EBIT is expected to be $1,000,000 at year end (i.e., at t = 1). The corporate tax rate is 40 percent. Friess Associates expects to pay out a dividend at year-end, which is 55 percent of its net income. The company estimates that its earnings and dividends grow at a constant rate of 5 percent a year. Suppose Friess Associates can issue $1,200,000 in debt at an interest rate 10% and uses the proceeds to repurchase shares of stock at the original price of $15. The cost of stock after the change in capital structure will be 12 percent. If the expected growth rate and payout ratio don't change, what is the expected price after the change in capital structure?

a. $17.25  
b. $15.00  
c. $20.98  
d. $18.86  
e. $33.17

25. The additional risk placed on stockholders by a firm's decision to use more debt is called _______________.

a. market risk  
b. interest rate risk  
c. financial risk  
d. stand-alone risk  
e. business risk

26. Which of the following statements is most correct?

a. If a firm uses no debt, its Return on invested capital can be defined as the return on equity.  
b. If a firm uses no debt, its business risk can be measured by the standard deviation of the firm's ROE.  
c. The uncertainty regarding future ROE, assuming the firm uses no debt financing is the defined as the firm's corporate risk.  
d. Both A and B are correct.  
e. All of the above are correct.