1. The Net Present Value approach to capital budgeting assumes that a proposed investment’s intermediate cash flows are reinvested at the __________; where the Internal Rate of Return method assumes reinvestment at the __________.
   a. cost of equity capital; internal rate of return
   b. weighted average cost of capital; cost of equity capital
   c. weighted average cost of capital; internal rate of return
   d. internal rate of return; cost of equity capital
   e. cost of equity capital; weighted average cost of capital

2. Which of the following would increase the NPV of the project being considered (all other things held constant)?
   a. An increase in the initial cost of the project.
   b. An increase in the required rate of return on the project.
   c. A reduction in the incremental revenues generated by the project.
   d. The use of straight-line depreciation rather than an accelerated method of depreciating the asset.
   e. A reduction in the operating costs associated with the project.

3. The internal rate of return (IRR) for a project is the discount rate at which:
   a. the project's expected net cash flows generate positive net present values.
   b. the present value of the project’s expected net cash inflows are equal the project’s initial cost.
   c. the net present value of the project is equal to the required rate of return.
   d. the required rate of return is equal to the internal rate of return.
   e. the project's net present value is positive.

4. Which of the following should NOT be considered in the initial period (time=0) of a proposed replacement decision?
   a. The market value of the machine to be replaced.
   b. Tax implications on the sale of the old machine.
   c. An investment tax credit.
   d. The book value of the machine to be replaced.
   e. Increases in operating costs associated with the project.

5. Which of the following remains unchanged as a firm increases its financial leverage for a given level of sales?
   a. Variability in EPS.
   b. Business Risk.
   c. The level of debt.
   d. Total risk of the firm.
   e. Financial Risk.
6. The operating risk (or business risk) of a firm can BEST be measured in variability of ____________, where the total risk of a firm is BEST measured in variability of ____________.
   a. Sales; EPS
   b. Sales; Net Income
   c. EBIT; Sales
   d. ROA; EBIT
   e. ROA; ROE

7. The use of debt in a firm’s capital structure yields:
   a. higher financial risk and lower expected return on equity.
   b. **higher expected return on equity and higher total risk.**
   c. higher variation in return on equity and lower fixed costs of production.
   d. higher expected return on assets and higher variation in return on equity.
   e. higher variation in return on assets and lower expected earnings per share.

8. Which of the following statements BEST describes the traditional view of capital structure theory?
   a. Firms should only use debt if the firm’s owners have no additional funds available for equity investment.
   **b. The moderate use of debt by a firm increases the firm's total value.**
   c. The use of debt by a firm allows the equity holders to maintain effective control of the firm’s activities.
   d. The use of debt by a firm increases the firm's level of business risk.
   e. The use of debt has no effect on the value of the firm.

9. As the typical manufacturing firm increases its operating leverage (all other things held constant):
   a. its total fixed costs decrease and variable cost per unit decreases.
   b. **its total fixed costs increase and variable cost per unit decreases.**
   c. its total fixed costs increase and total costs of production decreases.
   d. its total fixed costs decrease and variable cost per unit increases.

10. If the net present value of a proposed project is **positive**, then:
    a. the internal rate of return for the project is greater than the required rate of return.
    b. the internal rate of return for the project is equal to the required rate of return
    c. the internal rate of return for the project is zero.
    d. the internal rate of return for the project is less than zero
    e. the internal rate of return for the project is less than the required rate of return.
The following information applies to questions 11, 12 and 13. Projects C has the following net cash flows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-$5,000,000</td>
</tr>
<tr>
<td>1</td>
<td>1,800,000</td>
</tr>
<tr>
<td>2</td>
<td>1,800,000</td>
</tr>
<tr>
<td>3</td>
<td>2,200,000</td>
</tr>
<tr>
<td>4</td>
<td>2,400,000</td>
</tr>
</tbody>
</table>

11. If the required rate of return is 10 percent, what is the net present value for the project?
   a. $1,416,092
   b. $1,052,455
   c. $1,234,273
   d. $870,637
   e. $1,574,835

12. What is the Internal Rate of Return for the project?
   a. 18.52 percent
   b. 16.95 percent
   c. 20.14 percent
   d. 21.79 percent
   e. 15.55 percent

13. If the required rate of return is 10 percent, what is the modified internal rate of return?
   a. 14.50 percent
   b. **17.08 percent**
   c. 14.00 percent
   d. 16.24 percent
   e. 15.38 percent

14. What is the net present value of this investment?

| INITIAL COST       | $250,000 |
| PROJECT LIFE       | 7 years  |
| SALVAGE VALUE      | $15,000  |
| ANNUAL NET CASH FLOWS | $60,000 |
| DISCOUNT RATE      | 15%      |

   a. $5,264
   b. $3,755
   c. $55,264
This is an 8-point point. Mark answers 15 and 16 with the correct answer on your scantron.

15. & 16. Union Brick, Inc., has an electric kiln which is 5 years old and is expected to last another 10 years. It has a book value of $35,000, and it is being depreciated by the straight line method to a $5,000 salvage value. As Director of Capital Budgeting, you are evaluating a new gas kiln that should save UBI $20,000 a year in fuel costs. The new kiln would cost $125,000. It would be depreciated over 10 years by the straight line method to a $5,000 salvage value. The market value of the old kiln is $25,000. UBI's marginal tax rate is 40%, and the firm's cost of capital is 10%. What is the NPV of the replacement project?

   a. $ -6,145
   b. $ 1,783
   c. $ -145
   d. $ -29,139
   e. $ -3,145

17. Assume that a firm currently has EBIT of $6,000,000, DTL of 12.0, and DFL of 3.0. If sales decline by 10 percent next year, then what will be the firm's expected EBIT in one year?

   a. $ 3,600,000
   b. $ 2,400,000
   c. $ 4,000,000
   d. $ 3,000,000
   e. $ 1,000,000
The Nelson Equipment Company purchased a machine 5 years ago at a cost of $70,000. The machine had an expected life of 10 years at the time of the purchase and an expected salvage value of $5,000 at the end of the 10 years. It is being depreciated by the straight-line method toward a salvage value of $5,000, or by $6,500 per year.

A new machine can be purchased for $125,000 and require an additional $25,000 in installation costs. The new machine will require $10,000 in additional spare parts. During its 5-year life, it will reduce cash operating expenses by $50,000 per year. Sales are not expected to change. At the end of its useful life, the machine is estimated to be worth $8,000. ACRS depreciation will be used, and the machine will be depreciated over its 3-year class life rather than its 5-year economic life.

The old machine can be sold today for $15,000. The firm's tax rate is 40 percent and the appropriate discount rate is 12 percent. (The recovery allowance percentages for 3-year property are 33%, 45%, 15%, and 7%.)

18. What is the NET COST of the machine? (That is, what is the initial cash outflow?)
   a. $ -126,000
   b. $ -144,000
   c. $ -154,000
   d. $ -136,000
   e. $ -145,000

19. What are the net operating cash flows for Year 1 and 2?
   
<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $45,800</td>
<td>$56,600</td>
</tr>
<tr>
<td>b. $47,200</td>
<td>$54,400</td>
</tr>
<tr>
<td>c. $49,800</td>
<td>$57,000</td>
</tr>
<tr>
<td>d. $49,700</td>
<td>$60,500</td>
</tr>
<tr>
<td>e. $45,480</td>
<td>$51,960</td>
</tr>
</tbody>
</table>

20. What is the total value of the additional considerations at the end of the five years?
   
   a. $14,800
   b. $11,000
   c. $13,000
   d. $-200
   e. $9,800

21. What is the Net Present Value of the replacement decision?
   
   a. $15,371
   b. $18,251
   c. $17,012
   d. $16,610
   e. $20,250
22. Calculate the current price per share ($P_0$) for Olson Corporation, given the following information. The data all pertain to the year just ended.

\begin{align*}
\text{Sales} &= 1,000,000 \text{ units} \\
\text{Sales price per unit} &= $60.00 \\
\text{Variable cost per unit} &= $40.00 \\
\text{Fixed cost} &= $500,000 \\
\text{Debt outstanding} &= $750,000 \\
\text{Interest rate on debt} &= 10 \text{ percent} \\
\text{Tax Rate} &= 40 \text{ percent} \\
\text{Common stock shares outstanding} &= 1,000,000 \text{ shares} \\
\text{Beta} &= 1.3 \\
\text{kRF} &= 3 \text{ percent} \\
\text{kM} &= 12 \text{ percent} \\
\text{Pay-out ratio} &= 40 \text{ percent} \\
\text{Growth rate in earnings and dividends} &= 5 \text{ percent}
\end{align*}

\begin{align*}
a. \quad $50.46 & \quad \text{d.} \quad $48.06 \\
b. \quad $43.98 & \quad \text{e.} \quad $52.57 \\
c. \quad $46.18 & \quad \text{d.} \quad $48.06
\end{align*}
A group of retired college professors has decided to form a small manufacturing corporation. The company will produce a full line of traditional office furniture. Two financing plans have been proposed by investors. Plan A is an all-equity alternative. Under this agreement, one million shares will be sold to net the firm $10 per share. Plan B involves the use of financial leverage. A debt issue with a 20-year maturity will be privately placed. The debt issue will carry an interest rate of 18 percent, and the principal borrowed will amount to $6.0 million. Assume a corporate tax rate of 40 percent.

23. Find the EBIT indifference level associated with the two financing alternatives.
   a. $1,100,000  d. $1,500,000
   b. $1,800,000  e. $1,200,000
   c. $2,000,000

24. What is the EPS at this indifference level of EBIT?
   a. $0.60  d. $1.08
   b. $0.72  e. $1.24
   c. $0.90

25. The average annual EBIT has been estimated at $1,200,000; what is the expected EPS of each plan at this level of EBIT?

<table>
<thead>
<tr>
<th>Plan A</th>
<th>Plan B</th>
</tr>
</thead>
</table>
   a. $0.96 | $1.40 |
   b. $0.72 | $0.18 |
   c. $0.84 | $1.02 |
   d. $0.62 | $0.45 |
   e. $0.36 | $0.90 |
NPV = \(-C_0 + \sum \frac{NCF_i}{(1+k)^t}\)

EAA = \frac{NPV}{PVIFA}

\(-C_0 = \sum \frac{NCF_i}{(1+IRR)^t}\)

PI = \frac{C_0 + NPV}{C_0}

K_{re} = R_f + B(R_m - R_f) = \frac{(D_0 (1 + g)/P_0) + g}{1+IRR}

EPS = \frac{(EBIT-I)(1-TR)}{shares}

K_{ne} = \frac{(D_0 (1 + g)/(P_0(1 - F)) + g}{1+IRR}

NOPAT = EBIT(1-TR)

Ka = w_dk_d(1-tr) + w_pk_p + w_eke

Operating Cash Flow = NOPAT + Depreciation
Free Cash Flow = NOPAT – Net Investment in Operating Capital

K_{re} = R_f + B(R_m - R_f) = \frac{(D_0 (1 + g)/P_0) + g}{1+IRR}

EPS = \frac{(EBIT-I)(1-TR)}{shares}

K_{ne} = \frac{(D_0 (1 + g)/(P_0(1 - F)) + g}{1+IRR}

DOL = \frac{Q(P - VC)}{Q(P – VC) - FC}

Ka = w_dk_d(1-tr) + w_pk_p + w_eke

DTL = DOL x DFL

DFL = \frac{EBIT}{EBIT - I}

DPS = EPS x payout ratio

1. ____  11. ______  21. _____
2. ____  12. ______  22. _____
3. ____  13. ______  23. _____
4. ____  14. ______  24. _____
5. ____  15. ______  25 _____
6. ____  16. ______
7. ____  17. ______
8. ____  18. ______
9. ____  19. ______
10. ____  20. _____