A. MULTIPLE CHOICE QUESTIONS (30%)

1. Thomas Company's capital structure consists of 30% long-term debt, 25% preferred stock, and 45% common equity. The cost of capital for each component is shown below.

Long-term debt	8%
Preferred stock	11%
Common equity	15%

If Thomas pays taxes at the rate of 40%, what is the company's after-tax weighted average cost of capital?

A. 7.14%.
B. 9.84%.
C. 10.94%.
D. 11.90%.

2. The enterprise risk management model looks at:

A. Financial risk
B. Operating risk
C. Compliance risk
D. All of the above

3. A firm is given payment terms of 3/10, net 90 (eligible for a 3% discount in case of settlement within 10 days, or settlement within 90 days without discount). Using a 360-day year and ignoring the effects of compounding, what is the effective annual interest rate cost?

A. 12.0%.
B. 12.4%.
C. 13.5%.
D. 13.9%.

4. Using the CAPM formula, calculate the required rate of return on a stock, assuming:
Rf = 7% (the risk-free rate on a US Treasury security)
β = 0.75 (the beta coefficient for the company)
Km = 13% (the estimated return on the market portfolio)

A. 13%
B. 11.5%
C. 9.5%
D. 9%

5. If the demand for a good is elastic, then a(n)

A. decrease in price will increase total revenue.
B. increase in price will increase total revenue.
C. decrease in price will decrease total revenue.
D. increase in price will have no effect on total revenue.

6. At the beginning of the year, Lewis Corporation had 100,000 shares of common stock outstanding. During the year, the following transactions occurred.

Date	Transaction
April 1	Issued 10,000 shares in exchange for land
July 1	Declared and distributed a 10% stock dividend
October 1	Purchased 5,000 shares of treasury stock

The number of shares (WACSO) that Lewis should use when computing earnings per share at the end of the year is

A. 117,000.
B. 116,000.
C. 111,750.
D. 106,250.

7. Select information from a company's year-end balance sheet is shown below.

Balance Sheet
As of December 31, Year 1

Cash	$ 50,000
Accounts receivable	120,000
Inventory	75,000
Property, plant and equipment, net	250,000
Total assets	$495,000
Accounts payable	$ 35,000
Long-term debt	100,000
Total liabilities	135,000
Common stock	300,000
Retained earnings	60,000
Total equity	360,000
Total liabilities and equity	$495,000

Based on the above information, a common-size balance sheet for the company will show

A. long-term debt at 74%.
B. property, plant and equipment, net at 69%.
C. retained earnings at 17%.
D. accounts receivables at 24%.

8. The dollar value of a company's ending inventory on its balance sheet was $500,000, $600,000, and $400,000 for Years 1, 2, and 3, respectively. In preparing a horizontal analysis with Year 1 as the base year, the percentage change shown for Year 3 would be

A. (25%).
B. (20%).
C. 20%.
D. 80%.

9. If the U.S. dollar appreciated against the British pound, other things being equal, we would expect that

A. the British demand for U.S. products would increase.
B. U.S. demand for British products would decrease.
C. U.S. demand for British products would increase.
D. trade between the U.S. and Britain would decrease.

10. Which one of the following is NOT explicitly considered in the standard calculation of Economic Order Quantity (EOQ)?

A. Level of sales.
B. Fixed ordering costs.
C. Carrying costs.
D. Quantity discounts.

11. If Dexter Industries has a beta value of 1.0, then its

A. return should equal the risk-free rate.
B. price is relatively stable.
C. expected return should approximate the overall market.
D. volatility is low.

12. The following measures have been calculated to appraise a proposed project

- **The internal rate of return is 12%**
- **The return on capital employed is 16%**
- **The payback period is 4 years**

Which of the following statements is correct?

A. The payback is less than 5 years so the project should go ahead
B. The IRR is lower than the return on capital employed so the project should not go ahead
C. The IRR is greater than the cost of capital so the project should go ahead
D. The IRR is positive so the project should go ahead

13. A company is considering an investment of $400,000 in new machinery. The machinery is expected to yield incremental profits over the next five years as follows:

Year	*Profit*
1	$175,000
2	$225,000
3	$340,000
4	$165,000
5	$125,000

Thereafter, no incremental profits are expected and the machinery will be sold. It is company policy to depreciate machinery on a straight-line basis over the life of the asset.
The machinery is expected to have a value of $50,000 at the end of year 5.
What is the payback period of the investment in this machinery?

A. 0.9 years
B. 1.3 years
C. 1.5 years
D. 1.9 years

14. J Co is considering investing in a new machine costing $18,750, payable immediately. The scrap value will be zero, and the machine will be depreciated on a straight-line basis.
Output would be 1,000 units per year for each of the six years of the machine's life. The contribution margin per unit is $5.
Using a discount rate of 8%, and assuming that the cash flows arise at the end of a year, the discounted payback period is:

A. 3 years 9 months
B. 4 year 8 months
C. 3 years 8 months
D. 4 years 2 months

15. Grate Co has two manufacturing divisions, both of which are profit centers. Grate Co is considering how to assess the performance of the divisional managers. Division X employed capital is CU150,000 and is currently generating a profit of CU24,000. In order to try and improve the current performance, the manager of Division X is considering 3 new projects:

	Capital Investment (CU)	**Profit (CU)**
Project 1	48,000	12,000
Project 2	100,000	22,000
Project 3	50,000	9,000

Which combination of projects will maximize the divisions ROI?

A. Project 1 only
B. Both projects 1 and 2
C. Both projects 1 and 3
D. All three projects

16. Using the same facts as in the previous question and assuming that Grate Co's cost of capital is 10% and projects are ranked according to their Residual Income (RI), which project will be the priority choice for Division X?

A. Project 1
B. Project 2
C. Project 3
D. Cannot be determined without more information

17. What does beta measure in the capital asset pricing model?
- A. The additional return required over the risk-free rate
- B. Unsystematic risk
- C. The volatility of a stock relative to its competitors
- D. The volatility of a stock relative to the market

18. The optimal capitalization for an organization usually can be determined by the:
- A. Maximum degree of financial leverage (DFL).
- B. Maximum degree of total leverage (DTL).
- C. Lowest total weighted-average cost of capital (WACC).
- D. Intersection of the marginal cost of capital and the marginal efficiency of investment.

19. Future payments must be discounted in a bond valuation in order to take into account the:
- A. Fact that the bond was sold at a premium.
- B. Time value of money.
- C. Difference between the market rate of interest and the coupon rate.
- D. Expected interest rate on the coupon payments.

20. During a tactical planning meeting, company management discussed the performance of each of its business segments. Management concluded that its recreational vehicles segment was underperforming and lacked the core competencies to align with the company's three other business segments. Which strategy should the company pursue if management concluded that the divestiture of the recreational vehicles segment would improve its stock price?
- A. Equity carve-out
- B. Spin-off
- C. Sell-off
- D. Asset liquidation

B. Exercises (Show your calculations)

Exercise # 1 (20%)

Motor Co's financial statements appear below:

Motor Co Balance Sheet December 31, N		
Assets:		
Current Assets		
Cash	$100,000	
Marketable Securities	200,000	
Inventory	300,000	
Total Current Assets		$ 600,000
Noncurrent Assets		
Fixed Assets		500,000
Total Assets		$1,100,000

Liabilities and Stockholders' Equity:		
Current liabilities	$200,000	
Long-Term liabilities	100,000	
Total liabilities		$ 300,000
Stockholders' Equity		
Common stock, $1 par value, 100,000 shares	$100,000	
Preferred Stock	50,000	
Premium on Common Stock	500,000	
Retained Earnings	150,000	
Total Stockholders' Equity		800,000
Total Liabilities and Stockholders' Equity		$1,100,000

Motors Co Income Statement For the year Ended December 31, N	
Net Sales	$10,000,000
Cost of Goods Sold	6,000,000
Operating Expenses	1,000,000
Income Taxes (50% rate)	To determine

Additional information available is a market price of $150 per share of common stock and total dividends of $600,000 for common shareholders for the year 'N', and $250,000 of inventory as of December 31, 'N – 1'.

Required:

Compute the following ratios:

(a) Current ratio
(b) Quick ratio
(c) Inventory turnover
(d) Average age of inventory (Days sales in Inventory)
(e) Debt-equity ratio
(f) Earnings per share (EPS)
(g) Common Dividends per share (DPS)
(h) Common Dividend payout ratio (DPR)

<u>Exercise # 2 (16%)</u>

Calvin Inc. is considering the purchase of a new state-of-art machine to replace its hand-operated machine. Calvin's effective tax rate is 40%, and its cost of capital is 12%. Data regarding the existing and new machines are presented next.

	Existing Machine	New Machine
Original cost	$ 50,000	$ 90,000
Installation costs	0	4,000
Freight and insurance	0	6,000
Expected end salvage value	0	0
Depreciation method	Straight line	Straight line
Expected useful life	10 years	5 years

The existing machine has been in service for seven years and could be sold currently for $25,000. Calvin expects to realize a before-tax annual reduction in labor costs of $30,000 If the new machine is purchased and placed in service.

If the new machine is purchased, what would be the amount of the cash flows for the fifth year?

Exercise # 3 (20%)

Voltar Company manufactures and sells a specialized cordless telephone for high electromagnetic radiation environments. The company's contribution format income statement for the most recent year is given below:

	Total	Per Unit	Percent of Sales
Sales (20,000 units)	$ 1,200,000	$ 60	100%
Variable expenses	900,000	45	? %
Contribution margin	300,000	$ 15	? %
Fixed expenses	240,000		
Net operating income	$ 60,000		

Management is anxious to increase the company's profit and has asked for an analysis of a number of items.

Required:

1. Compute the company's break-even point in both units and sales dollars. Use the equation method.
2. Assume that sales increase by $400,000 next year. If cost behavior patterns remain unchanged, by how much will the company's net operating income increase?
3. Refer to the original data. Assume that next year management wants the company to earn a profit of at least $90,000. How many units will have to be sold to meet this target profit?
4. Refer to the original data. Compute the company's margin of safety in both dollar and percentage form.
5.
    a. Compute the company's degree of operating leverage at the present level of sales.
    b. Assume that through a more intense effort by the sales staff, the company's sales increase by 8% next year. By what percentage would you expect net operating income to increase?

Exercise # 4 (14%)

The controller of AMH Co. has asked you to calculate the firm's weighted average cost of capital (WACC).

The company's statement of financial position as at 31 December 20X1 is presented below

Assets	
Current assets	
Cash and cash equivalents	$ 3,500,000
Accounts receivable, net	4,750,000
Inventory	3,250,000
Prepaid expenses and other assets	500,000
Total current assets	12,000,000
Non-current assets	
Property, plant, and equipment, net	14,000,000
Goodwill	4,000,000
Total non-current assets	18,000,000
Total assets	$30,000,000
Liabilities	
Current liabilities	
Accounts payable	$ 2,500,000
Accrued expenses	500,000
Income taxes payable	1,000,000
Total current liabilities	4,000,000
Non-current liabilities	
Bonds	3,000,000
Total non-current liabilities	3,000,000
Total liabilities	$ 7,000,000
Shareholders' equity	
Preferred stock	$ 1,000,000
Common stock	4,000,000
Additional paid-in-capital	10,000,000
Retained earnings	8,000,000
Total shareholders' equity	23,000,000
Total liabilities and shareholders' equity	**$30,000,000**

Additional information:

- The historic growth rate of AMH Inc.'s ordinary dividends at 4.1 percent per annum

- The income tax rate is 30 percent.
- Further information about the company's capital:
  - ✓ Common stock (par value $0.50/share) trading at $4.70 per share (ex-dividend). Ordinary dividend per share is $0.363.
  - ✓ 12 percent preferred stock (par value $10/share) trading at $12 per share (ex-dividend).
  - ✓ 7 percent bonds (par value $1,000) trading at $1,045 (ex-interest); pretax cost is 6.86%.

Calculate each required WACC component. Round dollar amounts to the nearest dollar and percentages to one decimal place:

a. Cost of retained earnings

b. Cost of preferred stock

c. After-tax cost of debt

d. Total market value of common stock

e. Total market value of preferred stock

f. Total market value of bonds

g. Weighted average cost of capital

Good Work!!