Sample Examination for 2000 Candidates
CFA® Level I
120 Questions
3 Hours

AIMR has developed this sample examination to help candidates practice for the Level I examination. This 120-question sample examination represents a three-hour section (one-half the regular exam time). To simulate realistic exam-day conditions, candidates may want to set aside a block of three hours in which to take the sample examination. Doing so will allow 1½ minutes, on average, for each question.

The sample examination is intended only to give candidates practice at answering questions that are similar in style to those that will appear on the 2000 CFA Level I examination. None of these sample questions will appear on that examination. Candidates should not rely on the sample exam as their only means of preparing for the 2000 CFA Level I examination. Careful study of the readings listed in the *2000 CFA Level I Study Guide* is essential to being well prepared.

AIMR strives to be accurate with the guideline answers to sample examinations. If you detect any irregularities, please submit them by fax to: **Sample Exam Comments** at 804.951.5299. Corrections will be printed in the *Candidate Bulletin* and posted on the AIMR website. **No individual replies will be given**.

Sample Examination Structure			
Question	**Topic**	**Percent**	**Minutes**
1–18	Ethical and Professional Standards	15	27.0
19–36	Quantitative Analysis	15	27.0
37–51	Economics	13	22.5
52–80	Financial Statement Analysis	24	43.5
81–92	Markets and Instruments	10	18.0
93–108	Asset Valuation	13	24.0
109–120	Portfolio Management and Analysis of Alternative Investments	10	18.0
Total		100	180.0

QUESTIONS 1 THROUGH 18 RELATE TO ETHICAL AND PROFESSIONAL STANDARDS AND ARE ALLOCATED 27 MINUTES.

1. The AIMR Code of Ethics specifically addresses *all* of the following **EXCEPT**:

    A. competence.
    B. integrity and dignity.
    C. independent judgment.
    D. importance of contractual obligations.

2. According to the AIMR Code of Ethics, members must practice, and encourage others to practice, in a professional and ethical manner that will:

    A. reflect credit on members and their profession.
    B. add value for clients, prospects, employers, and employees.
    C. maintain the excellent reputation of AIMR and its members.
    D. encourage talented and ethical individuals to enter the investments field.

3. George Moses, CFA, analyzes Technicorp for a brokerage company. Extensive study has led Moses to rate Technicorp as a "hold," largely because of increasing competition in the industry. At a recent AIMR Society meeting, Moses discussed Technicorp's prospects with two other analysts. Although the other analysts did not give a reason, both said that Technicorp was about to experience rapid earnings growth. Upon returning to his office, Moses released a "buy" recommendation based on this new information. Moses was in:

    A. compliance with the AIMR Standards of Professional Conduct.
    B. violation of the AIMR Standards because he copied the opinions of others.
    C. violation of the AIMR Standards because he did not seek approval of the change from his supervisor.
    D. violation of the AIMR Standards because he did not have a reasonable and adequate basis for his recommendation.

4. Wilfred Clark, CFA, accumulated several items of nonpublic information through contacts with computer companies. Although none of the information is "material" individually, Clark concluded, by combining the nonpublic information, that one of the companies will have unexpectedly high earnings in the coming year. According to the AIMR Standards of Practice Handbook, Clark:

    A. may not use the nonpublic information.
    B. may use the nonpublic information to make investment recommendations and decisions at any time.
    C. must make reasonable efforts to achieve immediate public dissemination of the nonpublic information.
    D. may use the nonpublic information but only after gaining approval from a supervisory analyst attesting to its nonmateriality.

5. An AIMR member resides in Country A, where securities laws are *more* strict than the AIMR Standards of Professional Conduct, and does all of his business in Country B, where securities laws are *less* strict than the AIMR Standards. The laws of Country A apply to the member's professional conduct, but those laws state that conduct is governed by the laws of the locality in which business is conducted. According to the AIMR Standards of Practice Handbook, the member has a duty to adhere to:

    A. the laws of Country A.
    B. the laws of Country B.
    C. AIMR Standards of Professional Conduct.
    D. a basic standard of competence and diligence.

6. The AIMR Standards of Professional Conduct state that a financial analyst shall not, when presenting material to others, "copy or use in substantially the same form, material prepared by another person without acknowledging its use and identifying the name of the author or publisher of such material." The analyst, however, may use information from other sources without acknowledgment if the information:

    A. includes the analyst's own conclusions.
    B. is only being reported in a one-to-one client presentation.
    C. is only being reported to the analyst's employer or associates.
    D. is factual information published in recognized financial and statistical reporting services.

7. The AIMR Standards of Professional Conduct specifically require that AIMR members must inform their employer, in writing, about the Standards only if they work at companies that:

A. provide investment advice directly to clients.
B. employ 25 or more investment professionals.
C. have not previously employed AIMR members.
D. have not publicly acknowledged, in writing, the AIMR Standards as part of the company's policies.

8. Susan Roberts, CFA, a portfolio manager for Howard Investment Counsel, received a call from Michael Moore, an institutional broker. Moore called to recommend buying Megamove, an obscure stock on the Nasdaq Stock Market, as a takeover candidate. In the past, Moore has demonstrated an ability to pick takeover candidates. If Roberts buys the stock, is she violating the AIMR Standards of Professional Conduct involving trading on material nonpublic information?

A. No.
B. Yes, because Roberts did not research the stock herself.
C. Yes, because Roberts is receiving confidential information.
D. Yes, because Moore and his sources are breaching fiduciary duty and are receiving personal benefits as a result.

9. The AIMR Standards of Professional Conduct prohibit CFA charterholders from making statements misrepresenting their qualifications, their firm's services, or the expected performance of any investment. These Standards are intended to apply to:

   I.   oral representations.
   II. written statements.
   III. advertising.

A. I and II only.
B. I and III only.
C. II and III only.
D. I, II, and III.

10. According to the AIMR Standards of Practice Handbook, which of the following statements about a member's use of clients' brokerage commission is **FALSE**? Client brokerage commissions:

A. may be directed to pay for the investment manager's operating expenses.
B. should be used by the member to ensure that fairness to the client is maintained.
C. should be commensurate with the value of the brokerage and research services received.
D. may be used by the member to pay for securities research used in managing the client's portfolio.

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11. Beth Patrick, a fixed income analyst at a brokerage company, assists her company's traders by developing in-house bond ratings to supplement those of the major bond rating services. The traders use disparities in the ratings to construct profitable investment strategies. Patrick makes inferences from nonmaterial private information and news events, which she reflects in her bond ratings. Patrick's approach:

   A. reflects the mosaic theory.
   B. violates confidentiality rules.
   C. violates insider trading rules.
   D. reflects the misappropriation of information theory.

12. When an investment professional has a limited number of shares of an initial public offering to distribute, which of the following allocation methods *violate* the AIMR Standards of Professional Conduct?

   I.   First fill the orders of individual clients, then fill the orders of institutional clients.
   II. First fill the orders of the clients who have generated the most commissions during the past year.
   III. First fill the orders of those who have been clients of the investment professional for the longest period of time.

   A. I and II only.
   B. I and III only.
   C. II and III only.
   D. I, II, and III.

13. Which of the following is **NOT** a stated goal of the AIMR Performance Presentation Standards?

   A. To enhance the professionalism of the securities industry.
   B. To promote policies that help analysts avoid conflicts of interest.
   C. To improve the service offered to investment management clients.
   D. To achieve greater uniformity and comparability among performance disclosures.

14. The corporate finance department of an investment banking firm decides to compete for the business of ETV Corporation. Knowing that the firm's brokerage department has a "sell" recommendation on ETV, the director of corporate finance department writes a letter to the director of the brokerage department asking that the recommendation be changed to "buy." According to the AIMR Standards of Practice Handbook, which of the following is the *best* action for the brokerage department to take?

    A. Assign a new analyst to decide if the stock should receive a "buy" recommendation.
    B. Have the director of the corporate finance department review the recommendation for the stock rating to ensure its accuracy.
    C. Change the recommendation to "buy" only after receiving written direction from the director of the corporate finance department.
    D. Remove ETV Corporation from the research universe and put it on a restricted list giving only factual information about the company.

15. Which of the following topics is **NOT** addressed by the AIMR Performance Presentation Standards?

    A. Calculation of returns.
    B. Presentation of results.
    C. Disclosure of conflicts of interest.
    D. Creation and maintenance of composites.

16. Louis Stark, CFA, is employed in the merger and acquisitions department of an investment firm. His friend, Elizabeth Mackie, CFA, is a portfolio manager in the investment management department of the same firm. Stark is helping a client acquire Gamma Corporation. According to the AIMR Standards of Practice Handbook, which of the following is the *most appropriate* action to take involving communication between the two departments?

    A. Stark may tell Mackie about the pending merger if Mackie promises not to release the information to the public.
    B. The investment firm must add Gamma Corporation to its list of stocks that cannot be added to portfolios managed by employees of the investment firm.
    C. The investment firm should build a Fire Wall between the merger and acquisitions department and the investment management department.
    D. Stark may tell Mackie about the pending merger if Mackie promises in advance not to use this information to help make her investment decision about Gamma Corporation.

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17. AIMR members with supervisory responsibility are:

    A. not expected to prevent violations of laws, rules, and regulations by non-AIMR member employees.

    B. expected to establish and implement written compliance procedures about applicable statutes, regulations, and provisions of the AIMR Code and Standards.

    C. in compliance with the AIMR Standards after warning an offending employee to stop violating the applicable statutes, regulations, and provisions of the AIMR Code and Standards.

    D. expected to evaluate personally the conduct of their employees concerning applicable statutes, regulations, and provisions of the AIMR Code and Standards on a continuing basis regardless of how many employees they supervise.

18. According to the AIMR Standards of Practice Handbook, AIMR members are permitted to:

    A. use materials, prepared by an AIMR member employed by another company, in research reports without acknowledgment.

    B. depend on coworkers, who are AIMR members, to fulfill the obligation of informing employers of the Code and Standards.

    C. be excused for a lack of knowledge of the laws and regulations of countries in which they provide investment services, but not of the country where they live and work.

    D. waive the requirement to inform their employer, in writing, that AIMR members are obligated to comply with the Code and Standards, if the employer has acknowledged, in writing, adoption of the Code and Standards.

QUESTIONS 19 THROUGH 36 RELATE TO QUANTITATIVE ANALYSIS AND ARE ALLOCATED 27 MINUTES.

19. An analyst gathered the following data:

63.5	96.9	112.3	134.1
66.4	98.3	116.2	138.5
75.6	99.5	116.9	139.8
77.5	100.7	118.3	140.7
84.4	102.0	122.0	143.0
87.6	105.5	122.2	153.9
89.9	108.4	124.5	155.5

In constructing a frequency distribution using five classes, if the first class is "60 up to 80," the class frequency of the *third* class is:

A. 4.
B. 5.
C. 6.
D. 8.

20. An analyst constructed the following hypothesis test:

H_0: $b = 0$
H_1: $b > 0$

This null hypothesis means that:

A. the dependent variable is sensitive to changes in the independent variable.
B. the independent variable is sensitive to changes in the dependent variable.
C. changes in the dependent variable do not explain changes in the independent variable.
D. changes in the independent variable do not explain changes in the dependent variable.

21. A portfolio of non-dividend-paying stocks earned a geometric mean return of 5 percent between January 1, 1993, and December 31, 1999. The arithmetic mean return for the same period was 6 percent. If the market value of the portfolio at the beginning of 1993 was $100,000, the market value of the portfolio at the end of 1999 was *closest* to:

A. $135,000.
B. $140,710.
C. $142,000.
D. $150,363.

22. What are the mean and median of the data in the following frequency distribution?

Class	Frequency
0 up to 10	2
10 up to 20	5
20 up to 30	6
30 up to 40	3

	Mean	Median
A.	21.25	25.00
B.	21.25	21.67
C.	25.00	21.67
D.	25.00	25.00

23. Which of the following statements about standard deviation is **TRUE**? Standard deviation:

A. is the square of the variance.
B. can be a positive or a negative number.
C. is denominated in the same units as the original data.
D. is the arithmetic mean of the squared deviations from the mean.

24. An analyst developed the following probability distribution of the rate of return for a common stock:

Scenario	Probability	Rate of Return
1	0.25	0.08
2	0.50	0.12
3	0.25	0.16

The standard deviation of the rate of return is *closest* to:

A. 0.0200.
B. 0.0267.
C. 0.0283.
D. 0.0400.

25. A stock with a coefficient of variation of 50 percent has a(n):

A. variance equal to half the stock's expected return.
B. expected return equal to half the stock's variance.
C. expected return equal to half the stock's standard deviation.
D. standard deviation equal to half the stock's expected return.

26. Least squares regression assumes that the relationship between the dependent and independent variables is:

    A. causal.
    B. random.
    C. straight-line.
    D. economically significant.

27. An individual deposits $10,000 at the beginning of each of the next 10 years, starting today, into an account paying 9 percent interest compounded annually. The amount of money in the account at the end of 10 years will be *closest* to:

    A. $109,000.
    B. $143,200.
    C. $151,900.
    D. $165,600.

28. The probability that two or more events will happen concurrently is:

    A. joint probability.
    B. multiple probability.
    C. concurrent probability.
    D. conditional probability.

29. An analyst expects that 10 percent of all publicly traded companies will experience a decline in earnings per share (EPS) next year. This analyst has developed a ratio to help forecast a decline in a company's EPS. If a company is headed for an EPS decline, there is a 70 percent probability that the ratio will be negative. If the company is not headed for an EPS decline, there is a 20 percent probability that the ratio will be negative. The analyst randomly selects a company and its ratio is negative. Based on Bayes' theorem, the posterior probability that the company will experience an EPS decline next year is *closest* to:

    A. 3%.
    B. 7%.
    C. 18%.
    D. 28%.

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30. Which of the following statements about a normal distribution is **FALSE**? A normal distribution is:

A. asymptotic.
B. a discrete probability distribution.
C. a symmetrical or bell-shaped distribution.
D. described by a curve that theoretically extends from negative infinity to positive infinity.

31. An investment strategy has an expected return of 12 percent and a standard deviation of 10 percent. If investment returns are normally distributed, the probability of getting a return less than 2 percent is *closest* to:

A. 10%.
B. 16%.
C. 32%.
D. 34%.

32. Based on a normal distribution with a mean of 500 and standard deviation of 150, what is the z value for an observation at 200?

A. –2.00.
B. –1.75.
C. 1.75.
D. 2.00.

33. An investor wants to have $1 million when she retires in 20 years. If she can earn a 10 percent annual return, compounded annually, on her investments, the lump-sum amount she would need to invest today to reach her goal is *closest* to:

A. $100,000.
B. $117,459.
C. $148,600.
D. $161,506.

34. If the standard deviation of a population is 100 and a sample size taken from that population is 64, what is the standard error of the sample means?

A. 0.08.
B. 1.56.
C. 6.40.
D. 12.50.

35. In hypothesis testing, a Type II error is the event of:

A. rejecting the null hypothesis when it is true.
B. rejecting the null hypothesis when it is false.
C. accepting the null hypothesis when it is true.
D. accepting the null hypothesis when it is false.

36. An investment promises to pay $100 one year from today, $200 two years from today, and $300 three years from today. If the required rate of return is 14 percent, compounded annually, the value of this investment today is *closest* to:

A. $404.
B. $444.
C. $462.
D. $516.

QUESTIONS 37 THROUGH 51 RELATE TO ECONOMIC ANALYSIS AND ARE ALLOCATED 22 ½ MINUTES.

37. According to new classical economists, what effect does financing a reduction in current taxes by government borrowing have on aggregate demand? Demand will be:

   A. reduced.
   B. increased.
   C. unaffected.
   D. increased or reduced, depending on interest rate levels.

38. The major purpose of a central bank is:

   A. implementing fiscal policy.
   B. financing the federal government.
   C. issuing various financial securities.
   D. providing a favorable monetary climate.

39. The crowding-out model suggests that persistent, large government budget deficits are associated with a(n):

   A. increase in net exports.
   B. decrease in private spending.
   C. decrease in the real rate of interest.
   D. decrease in demand for loanable funds.

40. Based on historical data and assuming less-than-full employment, periods of sharp acceleration in the growth rate of the money supply tend to be associated *initially* with:

   A. periods of economic recession.
   B. an increase in the velocity of money.
   C. a rapid growth of gross domestic product.
   D. reductions in real gross domestic product.

41. When the inflationary side effects of expansionary government macroeconomic policies are anticipated quickly, the *primary* impact of a demand stimulus is a(n):

   A. increase in output.
   B. increase in the price level.
   C. decrease in unemployment.
   D. increase in aggregate supply.

42. According to the adaptive expectations hypothesis, when the inflation rate is accelerating, individuals will tend to make a systematic error by:

A. overestimating the future inflation rate.
B. underestimating the future inflation rate.
C. assuming the future inflation rate will eventually decline.
D. assuming the future inflation rate will continue to accelerate.

43. Which of the following is *least likely* to explain why government regulation is usually a sub-optimal response to monopoly makers?

A. Regulatory agencies often reflect the views of special interests.
B. Owners of regulated companies can lack the incentive to operate at a low cost.
C. Regulatory agencies may lack information about the true costs and profits of companies.
D. Regulatory agencies can typically enforce marginal cost pricing but not average cost pricing.

44. The law of diminishing marginal utility states that the:

A. marginal return derived from making successive units of investment eventually declines.
B. additional satisfaction derived from consuming successive units of a product eventually declines.
C. additional satisfaction derived from consuming successive units of a product is limited by the amount of disposable income.
D. additional satisfaction derived from consuming successive units of a product can be increased by reducing the product price.

45. For most products, the long-run price elasticity of demand is:

A. less than the short-run price elasticity of demand.
B. greater than the short-run price elasticity of demand.
C. more likely to increase than the short-run price elasticity of demand.
D. more likely to decrease than the short-run price elasticity of demand.

46. Which of the following statements *best* describes the relationship between the amount of accounting profits (assuming historical-cost-based accounting) and the amount of economic profits of a company?

A. Accounting profits and economic profits are similar.
B. Economic profits are greater than accounting profits.
C. Accounting profits are greater than economic profits.
D. No systematic relationship exists between accounting and economic profits.

47. Which of the following factors would **NOT** cause a downward shift in a company's average total cost curve?

    A. A decrease in taxes.
    B. A decrease in historical costs.
    C. A decrease in resource prices.
    D. The use of improved technology.

48. Interest rate parity describes relationships among current:

    A. interest rates and expected future interest rates.
    B. interest rates, expected future interest rates, and spot/forward exchange rate differentials.
    C. inter-country interest rate differentials and spot/forward foreign exchange rate differentials.
    D. inter-country interest rate differentials and expected inter-country future interest rate differentials.

49. A profit-seeking company will *most likely* continue production in the short run if the product price at least exceeds:

    A. total cost per unit of output.
    B. fixed cost per unit of output.
    C. average cost per unit of output.
    D. variable cost per unit of output.

50. When the effects of expansionary monetary policy are fully anticipated, what impact does that policy tend to have on real economic activity?

    A. Little or no impact.
    B. Large expansionary impact.
    C. Moderate expansionary impact.
    D. Moderate contractionary impact.

51. A realistic objective of government regulation of a natural monopoly is to:

    A. expand output so consumer demand is fully met.
    B. provide incentives for potential competitors to enter the market.
    C. reduce the product price to the supplier's marginal cost per unit of output.
    D. reduce the product price to the supplier's average total cost per unit of output.

QUESTIONS 52 THROUGH 80 RELATE TO FINANCIAL STATEMENT ANALYSIS AND ARE ALLOCATED 43 ½ MINUTES.

Note to Candidates: Assume U.S. GAAP (generally accepted accounting principles) applies unless otherwise noted.

52.   A company's current ratio is 2.0. If the company uses cash to retire notes payable due within one year, would this transaction increase or decrease the current ratio and asset turnover ratio?

	Current Ratio	Asset Turnover Ratio
A.	Increase	Increase
B.	Increase	Decrease
C.	Decrease	Increase
D.	Decrease	Decrease

53.   Under U.S. GAAP, which of the following statements about impairment and appreciation of the value of long-lived assets is **TRUE**? Managers:

A. may recognize gains and losses due to impaired assets only when those assets are sold.
B. have considerable discretion about the timing and amount of recognized increase in the value of appreciated assets.
C. have considerable discretion about the timing and amount of impairment recognition for assets the company intends to keep.
D. may write up the value of previously-impaired assets to the original book value prior to impairment, if the asset recovers its value.

54.   All else equal, two companies have substantially different dividend payout ratios. After several years, the company with the lower dividend payout ratio is *most likely* to have:

A. lower inventory turnover.
B. higher inventory turnover.
C. less rapid growth of earnings per share.
D. more rapid growth of earnings per share.

55.   An analyst should consider whether a company acquired assets through a capital lease or an operating lease because a company may structure:

A. operating leases to look like capital leases to enhance their leverage ratios.
B. operating leases to look like capital leases to enhance their liquidity ratios.
C. capital leases to look like operating leases to enhance their leverage ratios.
D. capital leases to look like operating leases to enhance their liquidity ratios.

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56. Which of the following lease provisions would cause a lease to be classified as an operating lease?

   A. The lease contains a bargain purchase option.
   B. The collectibility of lease payments by the lessor is unpredictable.
   C. The term of the lease is more than 75 percent of the estimated economic life of the leased property.
   D. The present value of the minimum lease payments equals or exceeds 90 percent of the fair value of the leased property.

57. On January 1, a company entered into a capital lease resulting in an obligation of $10,000 being recorded on the balance sheet. The lessor's implicit interest was 12 percent. At the end of the first year of the lease, the cash flow from financing activities section of the lessee's statement of cash flows showed a use of cash of $1,300 applicable to the lease. How much did the company pay the lessor in the *first* year of the lease?

   A. $1,200.
   B. $1,300.
   C. $2,500.
   D. $10,000.

58. An analyst applied the DuPont System to the following data for a company:

   - Equity turnover   4.2
   - Total asset turnover   2.0
   - Net profit margin   5.5%
   - Dividend payout ratio   31.8%

   The company's return on equity is *closest* to:

   A. 1.3%.
   B. 11.0%.
   C. 23.1%.
   D. 63.6%.

59. Which of the following is reported as debt on the balance sheet?

   A. Preferred stock.
   B. Operating leases.
   C. Investment in affiliates.
   D. Minority interest in consolidated subsidiaries

60. Which of the following is **NOT** an example of off-balance-sheet financing?

A. Participating in joint ventures.
B. Using take-or-pay arrangements.
C. Issuing convertible preferred stock.
D. Selling accounts receivable to an unrelated party with limited recourse.

61. An analyst gathered the following information about a company for a fiscal year:

• Cash paid for land	$30,000
• Cash paid for salaries	$60,000
• Cash paid to suppliers	$40,000
• Cash paid for interest to bondholders	$20,000
• Cash collected from customers	$150,000
• Cash collected for sale of equipment	$75,000
• Depreciation expense	$10,000

If the company is not subject to income taxes, what is its net cash flow from operations for the fiscal year?

A. $20,000.
B. $30,000.
C. $50,000.
D. $75,000.

62. An analyst gathered the following information about a company:

- 1,000,000 common shares outstanding (no change during the year).
- $6,500,000 net income.
- $500,000 preferred dividends paid.
- $600,000 common dividends paid.
- $60 average market price of common stock for the year.
- 100,000 warrants outstanding exercisable at $50.

The company's diluted earnings per share is *closest* to:

A. $5.45.
B. $5.90.
C. $6.00.
D. $6.39.

63. During a period of falling price levels, the financial statements of a company using FIFO instead of LIFO for inventory accounting would show:

A. lower total assets and lower net income.
B. lower total assets and higher net income.
C. higher total assets and lower net income.
D. higher total assets and higher net income.

64. An analyst gathered the following information about a company:

- The capital structure does not include any potentially dilutive convertible securities, options, warrants, or other contingent securities.
- Preferred stock dividends of $2 million were paid for the year.
- Common stock dividends of $3.5 million were paid for the year.
- Net income for the year was $10.5 million.
- 20 million shares of common stock were outstanding on January 1, 1999.
- The fiscal year end is December 31.
- The company issued 6 million new shares of common stock on April 1, 1999.

The company's basic earnings per share for 1999 was *closest* to:

A. $0.35.
B. $0.37.
C. $0.43.
D. $0.46.

65. If a company recognizes revenue faster than justified, which of the following *best* describes whether accounts receivable, inventory, and retained earnings are overstated or understated?

	Accounts Receivable	Inventory	Retained Earnings
A.	Overstated	Overstated	Overstated
B.	Overstated	Understated	Overstated
C.	Understated	Understated	Overstated
D.	Understated	Understated	Understated

66. When analyzing a company's leverage and liquidity, an analyst should treat deferred tax liabilities on a company's balance sheet:

A. as equity.
B. as long-term debt.
C. as short-term debt.
D. on a case-by-case basis.

67. An analyst gathered the following information about a company for a fiscal year:

Quarter	Purchases in Units	Cost per Unit	Purchases in Dollars
1	200	$22	4,400
2	300	24	7,200
3	300	26	7,800
4	200	28	5,600
Total	1,000		25,000

- Inventory at the beginning of the 1st quarter: 400 units at $20 per unit = $8,000.
- Inventory remaining at the end of the 4th quarter: 600 units.
- Sales for the fiscal year: 800 units.

Reported inventory at the end of the fourth quarter using LIFO and FIFO would be:

	LIFO	FIFO
A.	$12,400	$15,800
B.	$14,200	$12,400
C.	$15,800	$20,600
D.	$20,600	$14,200

68. Which of the following classifies (as operating or investing cash flow) interest received, dividends received, and interest paid?

	Interest Received	Dividends Received	Interest Paid
A.	Operating	Operating	Operating
B.	Operating	Operating	Investing
C.	Operating	Investing	Investing
D.	Investing	Investing	Investing

Use the following data to answer Questions 69 to 71.

Brown Company provided the following financial statements:

Brown Company Income Statement, Year Ending December 31, Year 2	
Sales	$19,000
Cost of goods sold	12,000
Depreciation expense	1,500
Selling, general, and administrative expense	1,000
Interest expense	1,200
Taxable income	3,300
Taxes	1,440
Net income	$ 1,860

Other Data for 1998	
Dividends paid	$864
Sale of fixed assets	0

Brown Company Balance Sheet as of December 31	Year 1	Year 2
Assets		
Cash	$ 2,000	$ 2,200
Accounts receivable	3,000	3,500
Inventory	4,000	4,200
Total current assets	9,000	9,900
Fixed assets at cost	22,000	24,300
Accumulated depreciation	9,000	10,500
Net fixed assets	13,000	13,800
Total assets	$22,000	$23,700
Liabilities and equity		
Accruals	$ 1,600	$ 1,760
Accounts payable	2,400	2,640
Total current liabilities	4,000	4,400
Notes payable	11,000	11,800
Long-term debt	4,000	3,204
Common stock	2,000	2,300
Retained earnings	1,000	1,996
Total liabilities and Equity	$22,000	$23,700

69. Brown Company's financing cash flow for Year 2 was *closest* to:

    A. –$860.
    B. –$560.
    C. $4.
    D. $304.

70. Brown Company's quick ratio for Year 2 was *closest* to:

    A. 0.50.
    B. 0.83.
    C. 1.27.
    D. 2.12.

71. Brown Company's return on assets for Year 2 was *closest* to:

    A. 4%.
    B. 8%.
    C. 13%.
    D. 20%.

72. Which of the following expenditures to build a new plant should **NOT** be capitalized as property, plant, and equipment?

    A. Interest costs during construction.
    B. Freight expenses incurred shipping new machinery to the plant.
    C. Increases in the fair value of the plant assets during construction.
    D. Personnel expenses incurred to set up the new machinery before the plant begins operations.

73. In 1999, Baxter Company owned machinery that became permanently impaired. As of December 31, 1999, the machinery had a book value of $800,000 and a market value of $100,000. Baxter also owned a warehouse, located adjacent to a newly-opened transportation hub. As of December 31, 1999, the book value of the warehouse was $1,200,000 and its market value was $2,500,000. Baxter:

    A. must recognize the loss on the machinery and the gain on the warehouse in 1999.
    B. may recognize the loss on the machinery and the gain on the warehouse in 1999 or in later years.
    C. must recognize the loss on the machinery in 1999, but may not recognize the gain on the warehouse until it is sold.
    D. may recognize the loss on the machinery in 1999 or in later years, but may not recognize the gain on the warehouse until it is sold.

74. Which of the following describes how issuing zero-coupon bonds affects a company's financial statements?

    A. Company net income is overstated every year until maturity.
    B. Cash flow from operations decreases for the life of the bond.
    C. Cash flow from investing decrease during the year of maturity.
    D. Cash flow from financing increases during the year of issuance.

75. An analyst gathered the following information about a fixed asset purchased by a company:

- Purchase price $12,000,000
- Estimated salvage vale $2,000,000
- Estimated useful life 5 years

Using the information above and the double-declining-balance method, the company's depreciation expense in Year 3 will be:

A. $1,440,000.
B. $1,536,000.
C. $1,728,000.
D. $9,408,000.

76. The following information applies to a company's preferred stock:

- Current price $47.00 per share
- Par value $50.00 per share
- Annual dividend $3.50 per share

If the company's marginal corporate tax rate is 34 percent, the after-tax cost of preferred stock is *closest* to:

A. 4.62%.
B. 4.91%.
C. 7.00%.
D. 7.45%.

77. A manufacturing company is expected to pay cash dividends of $6 one year from today and growth is expected to be 7 percent. The current market price of the company's common stock is $72 per share. The company's tax rate is 34 percent. The company's after-tax cost of retained earnings is *closest* to:

A. 10.12%.
B. 14.79%.
C. 15.33%.
D. 15.92%.

78. Which of the following should **NOT** be considered as an *incremental cash flow* when analyzing a proposed corporate investment?

A. Sunk costs.
B. Externalities.
C. Opportunity costs.
D. Changes in net working capital.

79. Financial leverage differs from operating leverage because financial leverage accounts for a company's:

A. use of debt.
B. variability in sales.
C. use of plant and equipment.
D. variability in fixed operating costs.

80. Graham Industries has two separate divisions: the Farm Equipment Division and the Household Products Division. Each division accounts for about 50 percent of the company's revenues and assets. Managers now want to enter the toy industry. In assessing the attractiveness of investment projects in the toy industry, Graham should use a required rate of return based on:

A. a required return computed for the toy industry.
B. the required rate of return on the market portfolio.
C. Graham's current weighted-average cost of capital.
D. a weighted-average required return computed for the farm equipment, household products, and toy industries.

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QUESTIONS 81 THROUGH 92 RELATE TO MARKETS AND INSTRUMENTS AND ARE ALLOCATED 18 MINUTES.

81. Security market indexes are used:

> I.   as benchmarks for portfolio performance.
> II.   to construct index funds.
> III. as inputs for technical analysis.
> IV.   to determine systematic risk.

A. I and II only.
B. II and III only.
C. III and IV only.
D. I, II, III, and IV.

82. The divisor for the Dow Jones Industrial Average (DJIA) is *most likely* to decrease when a stock in the DJIA:

A. has a stock split.
B. has a reverse split.
C. pays a cash dividend.
D. is removed and replaced.

83. An order to buy or sell stock at the best current price is a:

A. stop order.
B. limit order.
C. floor order.
D. market order.

84. To maintain a fair and orderly market, stock exchange specialists in the United States are expected to:

A. buy against the market when the market is definitely declining and are expected to sell against the market when the market is definitely rising.
B. buy against the market when the market is definitely declining but are not expected to sell against the market when the market is definitely rising.
C. sell against the market when the market is definitely rising but are not expected to buy against the market when the market is definitely declining.
D. neither buy nor sell against the market, regardless of market trends.

85. In futures trading, the minimum level to which an equity position may fall before requiring additional margin is the:

    A. initial margin.
    B. variation margin.
    C. cash flow margin.
    D. maintenance margin.

86. A silver futures contract requires the seller to deliver 5,000 Troy ounces of silver. An investor sells one July silver futures contract at a price of $8 per ounce, posting a $2,025 initial margin. If the required maintenance margin is $1,500, what is the *first* price per ounce at which the investor would receive a maintenance margin call?

    A. $5.92.
    B. $7.89.
    C. $8.11.
    D. $10.80.

87. The current price of an asset is 75. A three-month, at-the-money American call option on this asset has a current value of 5. At what value of the asset will a covered call writer break even at expiration?

    A. 70.
    B. 75.
    C. 80.
    D. 85.

88. Direct trading of securities between two parties with no broker intermediary occurs in:

    A. the "third market."
    B. the "fourth market."
    C. over-the counter trading.
    D. a listed exchange market.

89. Which of the following statements about the value of a call option at expiration is **FALSE**?

A. The short position in the same call option can result in a loss if the stock price exceeds the exercise price.
B. The value of the long position equals zero or the stock price minus the exercise price, whichever is higher.
C. The value of the long position equals zero or the exercise price minus the stock price, whichever is higher.
D. The short position in the same call option has a zero value for all stock prices equal to or less than the exercise price.

90. The following diagram shows the value of a put option at expiration:
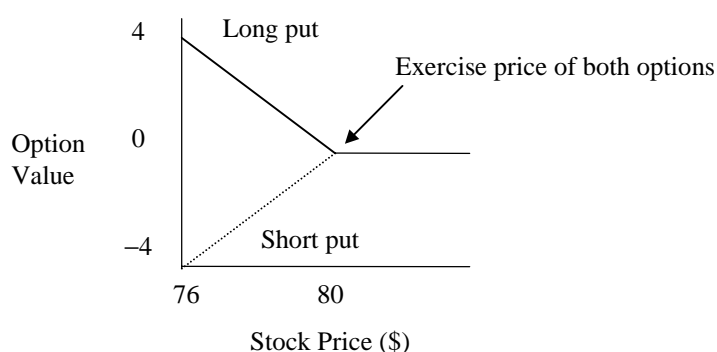
Ignoring transaction costs, which of the following statements about the value of the put option at expiration is **TRUE**?

A. The value of the short position in the put is $4 if the stock price is $76.
B. The value of the long position in the put is −$4 if the stock price is $76.
C. The long put has value when the stock price is below the $80 exercise price.
D. The value of the short position in the put is zero for stock prices equaling or exceeding $76.

91. The current price of an asset is 100. An out-of-the-money American put option with an exercise price of 90 is purchased along with the asset. If the breakeven point for this hedge is at an asset price 114 at expiration, then the value of the American put at the time of purchase must have been:

A. 0.
B. 4.
C. 10.
D. 14.

92. Two parties enter a three-year, plain-vanilla interest rate swap agreement to exchange the LIBOR rate for a 10 percent fixed rate on $10 million. LIBOR is now at 11 percent, 12 percent at the end of the first year, and 9 percent at the end of the second year. If payments are in arrears, which of the following characterizes the *net cash flow* to be received by the *fixed-rate payer*?

   A. $100,000 at the end of year 2.
   B. $100,000 at the end of year 3.
   C. $200,000 at the end of year 2.
   D. $200,000 at the end of year 3.

QUESTIONS 93 THROUGH 108 RELATE TO ASSET VALUATION AND ARE ALLOCATED 24 MINUTES.

93. A common stock pays an annual dividend per share of $2.10. The risk-free rate is 7 percent, and the risk premium for this stock is 4 percent. If the annual dividend is expected to remain at $2.10, the value of the stock is *closest* to:

    A. $19.09.
    B. $30.00.
    C. $52.50.
    D. $70.00.

94. Which of the following assumptions is **NOT** required by the constant-growth dividend discount model?

    A. Dividends grow at a constant rate.
    B. The stock is sold at some future date.
    C. The dividend growth rate continues indefinitely.
    D. The required rate of return is greater than the dividend growth rate.

95. An analyst gathered the following information about a company:

• 1998 net sales	$10,000,000
• 1998 net profit margin	6 percent
• 1999 expected sales growth	15 percent
• 1999 expected common stock shares outstanding	120,000

If the analyst expects the 1999 net profit margin to be only 90 percent of the 1998 net profit margin, the analyst's estimate of the company's 1999 earnings per share should be *closest* to:

    A. $3.83.
    B. $4.25.
    C. $4.50.
    D. $5.18.

96. An analyst gathered the following information about a company:

- 1998 net sales $10,000,000
- 1998 net profit margin 5.0%
- 1999 expected sales growth –15.0%
- 1999 expected profit margin 5.4%
- 1999 expected common stock shares outstanding 120,000

The analyst's estimate of the company's 1999 earnings per share should be *closest* to:

A. $3.26.
B. $3.72.
C. $3.83.
D. $4.17.

97. Which of the following assumptions does **NOT** imply an informationally efficient market?

A. Security prices adjust rapidly to reflect new information.
B. The timing of one news announcement is independent of other news announcements.
C. A risk-free asset exists, and investors can borrow and lend unlimited amounts at the risk-free rate.
D. Many profit-maximizing participants, each acting independently of the others, analyze and value securities.

98. A market anomaly refers to:

A. an exogenous shock to the market that is sharp but not persistent.
B. a price or volume event that is inconsistent with historical price or volume trends.
C. a trading or pricing structure that interferes with efficient buying and selling of securities.
D. price behavior that differs from the behavior predicted by the Efficient Market Hypothesis.

99. An analyst estimated the earnings per share and price-to-earnings ratio for a stock market series to be $43.50 and 26 times, respectively. The dividend payout ratio for the series is 65 percent. The value of the stock market series is *closest* to:

A. 396.
B. 735.
C. 1131.
D. 1866.

100. An analyst gathered the following spot rates:

Time (years)	Annual Spot Rate
1	15.0%
2	12.5%
3	10.0%
4	7.5%

The one-year forward rate two years from now is *closest* to:

A. –4.91%.
B. 5.17%.
C. 10.05%.
D. 15.74%.

101. Which of the following *most accurately* measures interest rate sensitivity for bonds with embedded options?

A. Convexity.
B. Effective duration.
C. Modified duration.
D. Macaulay duration.

102. A newly issued ten-year option-free bond is valued at par on June 1, 2000. The bond has an annual coupon of 8.0 percent. On June 1, 2003, the bond has a yield to maturity of 7.1 percent. Assume that the first coupon is reinvested at 8.0 percent and the second coupon is reinvested at 7.0 percent. The future bond price of the bond on June 1, 2003, is *closest* to:

A. 100.0% of par.
B. 102.5% of par.
C. 104.8% of par.
D. 105.4% of par.

103. A "fallen angel" bond is defined as a bond issued:

A. below investment grade.
B. at an original issue discount.
C. as investment grade, but declined to speculative grade.
D. as a secured bond, but the collateral value declined below par value.

104. The following are quotes for a U.S. Treasury bond:

      Bid   Asked
      102:2   102:5

If the face value of the bond is $1,000, the price an investor should pay for the bond is *closest* to:

A. $1,020.63.
B. $1,021.56.
C. $1,025.00.
D. $1,026.25.

105. An analyst gathered the following information:

Years to Maturity	Spot Rate
1	5.00%
2	6.00%
3	6.50%

Based on the data above, the one-year implied forward rate two years from now is *closest* to:

A. 6.25%.
B. 7.01%.
C. 7.26%.
D. 7.51%.

106. A 6 percent coupon bond pays interest semi-annually, has a modified duration of 10, sells for $800, and is priced at a yield to maturity (YTM) of 8 percent. If the YTM increases to 9 percent, the predicted decrease in price, using the duration concept, is:

A. $80.00.
B. $77.67.
C. $76.92.
D. $76.56.

107. A three-year option-free bond with an 8 percent annual coupon rate has a yield to maturity of 9 percent. Assume that the one- and two-year spot rates are 6.5 percent and 7.0 percent, respectively. The three-year spot rate is *closest* to:

   A. 6.4%.
   B. 8.1%.
   C. 9.0%.
   D. 9.2%.

108. If an investor's required return is 12 percent, the value of a 10-year maturity zero-coupon bond with a maturity value of $1,000 is *closest* to:

   A. $312.
   B. $688.
   C. $1,000.
   D. $1,312.

QUESTIONS 109 THROUGH 120 RELATE TO PORTFOLIO MANAGEMENT AND ANALYSIS OF ALTERNATIVE INVESTMENTS AND ARE ALLOCATED 18 MINUTES.

109. Which of the following statements about difficulties in investing in real estate investment trusts (REITs) or real estate limited partnerships (RELPs) is **TRUE**? Investors often have difficulty:

A. selling REITs because of poor liquidity.
B. selling RELPs because of poor liquidity.
C. investing in REITs because most REITs require a minimum investment of $25,000.
D. investing in RELPs because most RELPs require a minimum investment of $25,000.

110. In a real estate context, which of the following statements about leverage is **TRUE**?

A. The risk of a real estate investment is lower with negative leverage than with positive leverage.
B. The return on a real estate investment is positive with positive leverage but negative with no leverage.
C. The return on invested equity is higher with positive leverage than with negative leverage if a property's return exceeds its debt cost.
D. The market value of a property is higher with positive leverage than with negative leverage if the yield curve on debt is upward sloping.

111. An analyst used the following data and the direct capitalization approach to estimate the market value of an income-producing property to be $2,750,000:

- Annual gross potential rental income $400,000
- Annual property operating expenses $100,000
- Annual vacancy and collection losses $50,000

Which of the following capitalization rates is *closest* to the rate the analyst used to calculate the market value of the property?

A. 9.09%.
B. 10.91%.
C. 12.73%.
D. 14.55%.

112. Which of the following statements about the security market line (SML) is **FALSE**?

    A. Properly valued assets plot exactly on the SML.
    B. The SML leads all investors to invest in the same portfolio of risky assets.
    C. The SML provides a benchmark for evaluating expected investment performance.
    D. The SML is a graphic representation of the relationship between expected return and beta.

113. Under the provisions of a typical corporate defined-benefit pension plan, the employer is responsible for:

    A. paying benefits to retired employees.
    B. investing in conservative fixed income assets.
    C. counseling employees in the selection of asset classes.
    D. maintaining an actuarially determined, fully-funded pension plan.

114. The real estate valuation approach that uses information about past transactions involving properties that are similar to the subject property is the:

    A. cost approach.
    B. income approach.
    C. comparative sales approach.
    D. discounted cash flow approach.

115. Which of the following statements *typically* does **NOT** characterize the structure of an investment company?

    A. An investment company adopts a corporate form of organization.
    B. An investment company invests a pool of funds belonging to many investors in a portfolio of individual investments.
    C. An investment company receives an annual management fee ranging from 3 to 5 percent of the total value of the fund.
    D. The board of directors of an investment company hires a separate investment management company to manage the portfolio of securities and to handle other administrative duties.

116. A two-asset portfolio has the following characteristics:

Asset	Expected Return	Expected Standard Deviation	Weight
X	0.15	0.22	0.50
Y	0.10	0.08	0.40

The expected return on this two-asset portfolio is *closest* to:

A. 4%.
B. 10%.
C. 12%.
D. 25%.

117. Which of the following statements reflects the importance of the asset allocation decision to the investment process? The asset allocation decision:

A. helps the investor decide on realistic investment goals.
B. identifies the specific securities to include in a portfolio.
C. determines most of the portfolio's returns and volatility over time.
D. creates a standard by which to establish an appropriate investment time horizon.

118. Risk aversion has *all* of the following implications for the investment process **EXCEPT**:

A. the security market line is upward sloping.
B. the promised yield on AAA-rated bonds is higher than on A-rated bonds.
C. investors expect a positive relationship between expected return and expected risk.
D. investors prefer portfolios that lie on the efficient frontier to other portfolios with equal rates of return.

119. An investor is considering adding another investment to a portfolio. To achieve the maximum diversification benefits, the investor should add, if possible, an investment that has which of the following correlation coefficients with the other investments in the portfolio?

A. −1.0.
B. −0.5.
C. 0.0.
D. +1.0.

120. Consistent with capital market theory, unsystematic risk:

    A. is described as unique risk.
    B. refers to nondiversifiable risk.
    C. remains in the market portfolio
    D. refers to the variability in all risky assets caused by macroeconomic and other aggregate market-related variables.

GUIDELINE ANSWERS

1. D
   LOS: Study Session 2–1

   Reference: *Standards of Practice Handbook*, 8th ed., p. 1.

2. A
   LOS: Study Session 2–1

   Reference: *Standards of Practice Handbook*, 8th ed., p. 1.

3. D
   LOS: Study Session 2–2–IV

   Reference: *Standards of Practice Handbook*, 8th ed., p. 65.

4. B
   LOS: Study Session 2–2–V

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 143–152.

5. C
   LOS: Study Session 2–2–I

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 10–11.

6. D
   LOS: Study Session 2–2–II

   Reference: *Standards of Practice Handbook*, 8th ed., p. 29.

7. D
   LOS: Study Session 2–2–III

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 37–38.

8. A
   LOS: Study Session 2–2–V

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 145–149.

9. D
   LOS: Study Session 2–2–IV

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 131–132.

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10. A
   LOS: Study Session 2–2–IV

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 91–92.

11. A
   LOS: Study Session 2–3–b

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 228-231.

12. D
   LOS: Study Session 2–3–b

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 107–109.

13. B
   LOS: Study Session 2–4–a

   Reference: "Performance Presentation Standards," 2nd ed., in *2000 CFA Level I Candidate Readings*, p. 3.

14. D
   LOS: Study Session 2–3–a

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 79, 84.

15. C
   LOS: Study Session 2–4–c

   Reference: "Performance Presentation Standards," 2nd ed., in *2000 CFA Level I Candidate Readings*, pp. 11–19.

16. C
   LOS: Study Session 2–3–b

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 149–151, 232–235.

17. B
   LOS: Study Session 2–2–III
   Reference: *Standards of Practice Handbook*, 8th ed., p. 57.

18. D
   LOS: Study Session 2–3–b

   Reference: *Standards of Practice Handbook*, 8th ed., pp. 12, 13, 29, 37 and 38.

19. D
LOS: Study Session 3–1–A–a

Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., pp. 22–25.

20. D
LOS: Study Session 3–1–H–a

Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., pp. 306–307.

21. B
LOS: Study Session 3–1–B–a

There are seven annual periods between January 1, 1993 and December 31, 1999.
Market value end of 1999
$EMV = BMV \times (1 + GM)^n$
$= \$100,000 \times (1.05)^7$
$= \$140,710.$

Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 6–11.

22. B
LOS: Study Session 3–1–B–b

Calculation of the mean:

$$\overline{X} = \frac{\sum fX}{n}$$

$$= \frac{(5 \times 2)(15 \times 5)(25 \times 6)(35 \times 3)}{16}$$

$$= 21.25.$$

Calculation of the median:
With a total of 16 observations, the median observation is the eighth one. Assuming equal distribution of each observation within the group, the eight observation is 1/6 of the way between 20 and 30, or 21.67.

Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., pp. 82–85.

23. C
   LOS: Study Session 3–1–C–b

   Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., pp. 102–103.

24. C
   LOS: Study Session 3–3–f

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 14.

25. D
   LOS: Study Session 3–1–C–d

   Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., pp. 113–114.

26. C
   LOS: Study Session 3–1–I–f

   Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., p. 436.

27. D
   LOS: Study Session 3–2–c

   FVA = $10,000(15.193)(1.09) = $165,603.70,

   or, FVA = $10,000(17.560 – 1) = $165,600,

   or, by calculator: $165,602.93.

   Reference: Brigham, Houston, *Fundamentals of Financial Management*, 8th ed., pp. 218–220.

28. A
   LOS: Study Session 3–1–D–b

   Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., p. 153.

29. D
   LOS: Study Session 3–1–D–d

$$P(A_1|B) = \frac{P(A_1) \times P(B|A_1)}{[P(A_1) \times P(B|A_1)] + [P(A_2) \times P(B|A_2)]}$$

$$= \frac{(0.10)(0.70)}{[(0.10)(0.70)] + [(0.90)(0.20)]}$$

= 0.28, or 28%,

where A_1 = EPS decline
         A_2 = no EPS decline
         B = negative ratio.

Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., pp. 163–164.

30. B
   LOS: Study Session 3–1–F–a

   Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., p. 221.

31. B
   LOS: Study Session 3–1–F–e

   68% of the returns fall within ±1 standard deviation of the mean. Therefore,
   (100% – 68%)/2
   = 32%/2
   = 16%.

   Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., pp. 226–227.

32. A
   LOS: Study Session 3–1–F–c

$$z = \frac{X - \mu}{\sigma}$$
= (200 – 500)/150
= –2.0.

   Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., p. 224.

33. C

LOS: Study Session 3–2–a

$$PV = \frac{FV_n}{(1+i)^n}$$

$$= \frac{\$1,000,000}{(1+0.10)^{20}}$$

$$= \$148,600,$$

or divide $1 million by the FVIF of 20 year at 10 percent
$$= \$1,000,000/6.7275$$
$$= \$148,644,$$

or, by calculator: $148,644.

Reference: Brigham, Houston, *Fundamentals of Financial Management*, 8th ed., pp. 213–215.

34. D

LOS: Study Session 3–1–G–e

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}}$$

$$= \frac{100}{\sqrt{64}}$$
$$= 12.5.$$

Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., pp. 280–282.

35. D

LOS: Study Session 3–1–H–b

Reference: Mason, Lind, and Marchal, *Statistical Techniques in Business and Economics*, 10th ed., p. 308.

36. B

LOS: Study Session 3–2–f

$$PV = \sum_{t=1}^{n} CF_t \left(\frac{1}{1+i} \right)^t$$

$$= \$100(0.8772) + \$200(0.7695) + \$300(0.6750)$$
$$= \$444.12.$$

Reference: Brigham, Houston, *Fundamentals of Financial Management*, 8th ed., pp. 224–226.

37. C
   LOS: Study Session 4–1–A–a

   Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 275–277.

38. D
   LOS: Study Session 4–1–B–d

   Reference: Gwartney, Stroup, *Economics*, 8th ed., p. 308.

39. B
   LOS: Study Session 4–1–A–c

   Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 272–274.

40. C
   LOS: Study Session 4–1–C–d

   Reference: Gwartney, Stroup, *Economics*, 8th ed., p. 345.

41. B
   LOS: Study Session 4–1–D–a

   Reference: Gwartney, Stroup, *Economics*, 8th ed., p. 371.

42. B
   LOS: Study Session 4–1–D–b

   Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 359–362.

43. D
   LOS: Study Session 5–1–E–f

   Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 359–362.

44. B
   LOS: Study Session 5–1–A–a

   Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 572–573.

45. B
   LOS: Study Session 5–1–A–e

   Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 454–455.

46. C
    LOS: Study Session 5–1–B–c

    Reference: Gwartney, Stroup, *Economics*, 8th ed., p. 482.

47. B
    LOS: Study Session 5–1–B–g

    Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 495–497.

48. C
    LOS: Study Session 6–2–j

    Reference: Shapiro, *Foundations of Multinational Financial Management*, 3rd ed., in *2000 CFA Level I Candidate Readings*, p. 46.

49. D
    LOS: Study Session 5–1–C–d

    Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 510–512.

50. A
    LOS: Study Session 4–1–C–c

    Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 342–343.

51. D
    LOS: Study Session 5–1–E–f

    Reference: Gwartney, Stroup, *Economics*, 8th ed., pp. 571–572.

52. A
    LOS: Study Session 9–1–b

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 383–385, 389.

53. C
    LOS: Study Session 10–1–C–c, f

    Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 187–188.

54. D
    LOS: Study Session 9–1–b

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 406.

55. C
    LOS: Study Session 11–1–C–c

    Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., p. 538.

56. B
    LOS: Study Session 11–1–C–a

    Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 534–537.

57. C
    LOS: Study Session 11–1–C–b

    Financing section shows principal reduction only. Rental payment consists of interest plus principal.
    $= \$10,000(0.12) + \$1300$
    $= \$1200 + \$1300$
    $= \$2500$.

    Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., p. 540.

58. C
    LOS: Study Session 9–1–c

    $ROE = \text{Equity turnover} \times \text{Net profit margin}$
    $= 4.2 \times 5.5\%$
    $= 23.1\%$.

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 389–390, 393.

59. D
    LOS: Study Session 8–A–o

    Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 70–71.

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60. C
   LOS: Study Session 11–1–C–f

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 548–556.

61. B
   LOS: Study Session 8–1–B–e

   Net cash flow from operations = Cash collected from customers – Cash paid for salaries – Cash paid to suppliers – Cash paid for interest to bondholders
   = 150,000 – 60,000 – 40,000 – 20,000
   = 30,000.

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., p. 92.

62. B
   LOS: Study Session 9–2–a, 9–3–a

   Numerator:
   Net income – Preferred dividend
   = $6,500,000 – $500,000
   = $6,000,000.

   Denominator:
   100,000 warrants (proceeds $5,000,000) – (83,333) shares acquired at $60 with $5,000,000 proceeds + 1,000,000 outstanding
   = 1,016,667.

   $6,000,000/1,016,667
   = $5.90.

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 174–179; Sondhi, "SFAS 128, Earnings Per Share," in *2000 CFA Level I Candidate Readings*, pp. 55–57.

63. A
   LOS: Study Session 10–1–A–c

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 259–265.

64. A
   LOS: Study Session 9–2–a, 9–3–a

   $$\text{Basic EPS} = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average number of shares outstanding}}$$

   $$= \frac{\$10,500,00 - \$2,000,000}{(\frac{3}{12} \times 20,000,000) + (\frac{9}{12} \times 26,000,000)}$$

   $$= \$0.35.$$

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 174–179; Sondhi, "SFAS 128, Earnings Per Share," in *2000 CFA Level I Candidate Readings*, pp. 55–57.

65. B
   LOS: Study Session 8–1–A–a

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 48–58.

66. D
   LOS: Study Session 11–1–A–d

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 439–444.

67. A
   LOS: Study Session 10–1–A–a

   Ending inventory using LIFO:
   = 400($20) + 200($22)
   = $8,000 + $4,400
   = $12,400.

   Ending inventory using FIFO:
   = 200($20) + 300($26) + 100($24)
   = $5,600 + $7,800 + $2,400
   = $15,800.

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 259–260.

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68. A
   LOS: Study Session 8–1–B–e

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 112–117.

69. B
   LOS: Study Session 8–1–B–d, f

   Sales NP – Retired long-term debt + Stock sold – Dividends
   = \$800 – \$796 + \$300 – \$864
   = –\$560

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 89–97, 113–117.

70. C
   LOS: Study Session 9–1–a, b

   (Cash + AR)/Current liabilities
   = (\$2,100 + \$3,250)/\$4,200
   =1.27

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 385–386.

71. B
   LOS: Study Session 9–1–a, b, c

   NI/Total assets
   = \$4,860/\$22,850
   = 8%

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 393–396.

72. C
   LOS: Study Session 10–1–B–b

   Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 322–330.

73. D

LOS: Study Session 10–1–C–f

Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 393–403.

74. D

LOS: Study Session 11–1–B–a

Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 480–483.

75. C

LOS: Study Session 10–1–C–a

Year	Beginning of Year Book Value	Annual Depreciation	End of Year Book Value	Beginning of Year Accumulated Depreciation
1	$12,000,000	$4,800,000	$7,200,000	$0
2	$7,200,000	$2,880,000	$4,320,000	$4,800,000
3	$4,320,000	$1,728,000	$2,592,000	$7,680,000
4	$2,592,000	$592,000	$2,000,000	$9,408,000
5	$2,000,000	——	$2,000,000	$10,000,000

Reference: White, Sondhi, Fried, *The Analysis and Use of Financial Statements*, 2nd ed., pp. 382–383.

76. D

LOS: Study Session 12–1–A–b

$$k_{ps} = \frac{D_{ps}}{P_n}$$
$$= \$3.50/\$47.00$$
$$= 7.45\%.$$

Reference: Brigham, Houston, *Fundamentals of Financial Management*, 8th ed., pp. 355–356.

77. C

LOS: Study Session 12–1–A–c

$$RE = \frac{D_1}{P_0} + g$$
$$= \$6.00/\$72.00 + 0.07$$
$$= 15.33\%.$$

Reference: Brigham, Houston, *Fundamentals of Financial Management*, 8th ed., pp. 358–359.

78. A
   LOS: Study Session 12–1–C–b

   Reference: Brigham, Houston, *Fundamentals of Financial Management*, 8th ed., pp. 426–428.

79. A
   LOS: Study Session 12–1–E–f

   Reference: Brigham, Houston, *Fundamentals of Financial Management*, 8th ed., p. 498.

80. A
   LOS: Study Session 12–1–D–b

   Reference: Brigham, Houston, *Fundamentals of Financial Management*, 8th ed., p. 470.

81. D
   LOS: Study Session 7–1–B–a

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 152.

82. A
   LOS: Study Session 7–1–B–b

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 154.

83. D
   LOS: Study Session 7–1–A–e

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 126.

84. A
   LOS: Study Session 7–1–A–f

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 131–132.

85. D
   LOS: Study Session 15–1–B–e

   Reference: Kolb, *Futures*, *Options & Swaps*, 3rd ed., p. 18.

86. C
   LOS: Study Session 15–1–B–f

   $2,025 – X = \$1500$
   $X = \$525$.

   $525/5,000$ ounces
   = $0.105 or $0.11 per ounce

   $8 + $0.11 = $8.11 per ounce
   A seller loses when the price rises.

   Reference: Kolb, *Futures*, *Options & Swaps*, 3rd ed., p. 18.

87. A
   LOS: Study Session 15–1–D–h

   Reference: Kolb, *Futures*, *Options & Swaps*, 3rd ed., pp. 304–316.

88. B
   LOS: Study Session 7–1–A–c

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 125.

89. C
   LOS: Study Session 15–1–D–b

   Reference: Kolb, *Futures*, *Options & Swaps*, 3rd ed., p. 308.

90. C
   LOS: Study Session 15–1–D–d

   Reference: Kolb, *Futures*, *Options*, *& Swaps*, 3rd ed., pp. 313–314.

91. B
   LOS: Study Session 15–1–D–j

   Reference: Kolb, *Futures*, *Options & Swaps*, 3rd ed., pp. 304–316.

92. C
   LOS: Study Session 15–1–E–c

   Reference: Kolb, *Futures*, *Options*, *& Swaps*, 3rd ed., pp. 139–141.

93. A
   LOS: Study Session 17–1–A–a; Study Session 13–1–B–d

   $$V_j = \frac{D}{RFR + RP}$$

   = \$2.10/0.11
   = \$19.09.

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 18–19, 438–443.

94. B
   LOS: Study Session 13–1–B–b

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 443.

95. D
   LOS: Study Session 13–1–E–a

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 723–726.

96. C
   LOS: Study Session 13–1–E–a

   $\$8,500,000 \times 5.4\%$
   = 459,000/120,000
   = \$3.83.

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 723–726.

97. C
   LOS: Study Session 13–1–A–a

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 209–210.

98. D
   LOS: Study Session 13–1–A–e

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 212.

99. C
   LOS: Study Session 13–1–C–c

   $X = 43.50 \times 26$

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 669.

100. B
   LOS: Study Session 14–1–B–j

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 554–561.

101. B
   LOS: Study Session 14–1–B–t

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 579–580.

102. C
   LOS: Study Session 14–1–B–e

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 536–541.

103. C
   LOS: Study Session 14–1–A–e

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 512.

104. B
   LOS: Study Session 14–1–A–f

   102 and 5/32 of 1,000 = 1,021.56.

   Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 519–520.

105. D
LOS: Study Session 14–1–B–j

$$_{t+2}\, r_1 = \frac{\left(1+R_3\right)^3}{\left(1+R_2\right)^2} - 1$$

$$= \frac{(1+0.065)^3}{(1+0.060)^2} - 1$$

$$= 0.0751$$
$$= 7.51\%.$$

Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 554–556.

106. A
LOS: Study Session 14–1–B–o

$$\Delta P = -D_{mod} \times \Delta i \times P$$
$$= -10 \times (0.01) \times 800$$
$$= -80.$$

Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 568–569.

107. D
LOS: Study Session 14–1–B–i

Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 541–543.

108. A
LOS: Study Session 14–1–B–a

$\$1,000 \times 0.312$
$= \$312;$
$n = 20$ periods
$i = 6\%$ per period.

Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 511, 527.

109. B
      LOS: Study Session 16–1–l

      Reference: Gitman, Joehnk, *Fundamentals of Investing*, 6th ed., in *2000 CFA Level I Candidate Readings*, pp. 89–93.

110. C
      LOS: Study Session 16–1–g

      Reference: Gitman, Joehnk, *Fundamentals of Investing*, 6th ed., in *2000 CFA Level I Candidate Readings*, p. 78.

111. A
      LOS: Study Session 16–1–f

      Market capitalization rate = Annual NOI/market value

Gross potential rental income	$400,000
Property operating expenses	(100,000)
Vacancy and collection losses	(50,000)
Net operating income	$250,000

      $250,000/$2,750,000
      = 9.09%.

      Reference: Gitman, Joehnk, *Fundamentals of Investing*, 6th ed., in *2000 CFA Level I Candidate Readings*, p. 76.

112. B
      LOS: Study Session 17–1–C–d

      Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 288–292.

113. A
      LOS: Study Session 17–1–B–e

      Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 52.

114. C
      LOS: Study Session 16–1–e

      Reference: Gitman, Joehnk, *Fundamentals of Investing*, 6th ed., in *2000 CFA Level I Candidate Readings*, pp. 75–76.

115. C
    LOS: Study Session 16–2–a

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 967–968.

116. B
    LOS: Study Session 17–1–C–h

$$E(R) = \sum_{i=1}^{n} W_i R_i$$
$$= (0.15)(0.60) + (0.10)(0.40)$$
$$= 0.09 + 0.04$$
$$= 0.10, \text{ or } 10\%.$$

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 269.

117. C
    LOS: Study Session 17–1–B–f

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 56, 61.

118. B
    LOS: Study Session 17–1–C–a

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 252.

119. A
    LOS: Study Session 17–1–C–d

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., pp. 261–264.

120. A
    LOS: Study Session 17–1–D–c

    Reference: Reilly, Brown, *Investment Analysis and Portfolio Management*, 5th ed., p. 284.