Level I Version 1_v10 2012 Sample Exam

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1	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, p. 21 Study Session 1-2-c Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. B is correct. Although a violation of Standard I (A) Knowledge of the Law is likely to occur unless the asset base information is corrected, Cruz has yet to violate any CFA Institute Standards, so he need not report a violation. If Cruz does not take action, he will be in violation of the Standards. He would need to report this violation because Standard I (A) applies as the member should know his conduct may contribute to a violation of applicable laws, rules, regulations, or the Code and Standards related to the inaccurate sales materials.
2	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, pp. 20-21, 49-51 Study Session 1-2-c Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. A is correct because Standard I (A) Knowledge of the Law requires Members and Candidates to comply with the more strict law, rules, or regulations and follow the highest requirement, which in this case would be the CFA Institute Standards of Professional Conduct.
3	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, pp. 38-40, 71, 107-109 Study Session 1-2-b Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. A is correct because Standard III (B) Fair Dealing concerns the fair treatment of clients when making investment recommendations or taking investment action, but there is no indication the advisor has discriminated against any clients regarding his recommendations as he invests all clients in the same universe of stocks.

4	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, pp. 38-40, 90-91, 122 Study Session 1-2-b Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. A is correct as soliciting the bank client did not violate any Standard because the manager is no longer an employee of the bank. There is no violation of Standard IV (A) Loyalty, which prohibits the solicitation of employer's clients prior to cessation of employment.
5	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, pp. 46-47, 49-51, 59, 90-91 Study Session 1-2-b Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. A is correct because even though the company does not have a stock pre-clearance procedure, trading the stock of a company the analyst recommended as an acquisition candidate is an act that violates Standard IV (A) Loyalty, as she did not give her Employer the opportunity to take advantage of her skill/recommendation prior to buying the shares for her own portfolio.
6	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, pp. 49-51 Study Session 1-2-b Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. B is correct because a violation of Standard II (A) Material Nonpublic Information is likely to occur when using information that is selectively disclosed by corporations to a small group of investors, analysts, or other market participants. Information that is made available to analysts remains nonpublic until it is made available to investors in general.

7	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, pp. 19-20, 46-47, 59-60, 131 Study Session 1-2-c Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. C is correct because the member has engaged in information-based manipulation of RRC stock. Members and candidates must refrain from "pumping up" (or down in this case) the price of an investment by issuing misleading positive (negative) information for their or their clients' benefit. In addition, the member would be in violation of Standard I (A) Knowledge of the Law, because he has not acted with professionalism and integrity. The member has not violated Standard VI (B) Priority of Transactions because this concerns client investment transactions having priority over member or candidate investment transactions and is not applicable here.
8	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, p. 65 Study Session 1-2-c Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. A is correct. Standard III (A) Loyalty, Prudence, and Care and Gupta's duty of loyalty, prudence, and care is owed to the participants and beneficiaries (members) of the pension plan. As a church plan, the restrictions are reasonable and Gupta indicates it will not impact his ability to construct the portfolio.
9	"Guidance for Standards I-VII," CFA Institute 2012 Modular Level I, Vol. 1, p. 66 Study Session 1-2-b Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. A is correct because there is no violation of Standard III (A) Loyalty, Prudence, and Care by performing a cost-benefit analysis showing that voting all proxies might not benefit the client, and concluding voting proxies may not be necessary in all instances.

10	"The Time Value of Money," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA 2012 Modular Level I, Vol. 1, pp. 266-267 Study Session 2-5-c Calculate and interpret the effective annual rate, given the stated annual interest rate and the frequency of compounding. Use the formula for effective annual rate: $EAR = (1 + \text{Periodic interest rate})^m - 1$ Iteratively substitute the possible frequency of compounding until the EAR is 10.47%. For weekly compounding, $(1 + 0.10 / 52)^{52} - 1 = 0.10506 = 10.50\%$ For monthly compounding, $(1 + 0.10 / 12)^{12} - 1 = 0.10471 = 10.47\%$ For quarterly compounding, $(1 + 0.10 / 4)^4 - 1 = 0.10381 = 10.38\%$ Thus, the correct answer is monthly compounding.
11	"Discounted Cash Flow Applications," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA 2012 Modular Level I, Vol. 1, pp. 327-329 Study Session 2-6-e, f Calculate and interpret the bank discount yield, holding period yield, effective annual yield, and money market yield for a U.S. Treasury bill. Convert among holding period yields, money market yields, effective annual yields, and bond equivalent yield. First calculate the initial price (P_0) of the T-bill: $r_{BD} = \frac{D}{F} \times \frac{360}{t}$, $P_0 = 100 - D$ $0.0325 = \frac{D}{100} \times \frac{360}{90}$, $D = 0.8125$ $P_0 = 100 - 0.8125 =$ **99.1875** Then calculate the holding period yield (HPY) (recall that T-bills are pure discount instruments and do not pay coupons): $HPY = (P_t - P_0) \div P_0$ $HPY = (100 - 99.1875) \div 99.1875 = 0.00819$ Finally, convert the HPY into effective annual yield: $EAY = (1 + HPY)^{365/t} - 1$ $EAY = (1 + 0.00819)^{365/90} - 1 = 0.03364 = 3.36\%$

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2012 Modular Level I, Vol. 1, pp. 387-390
Study Session 2-7-g
Calculate and interpret (1) a range and a mean absolute deviation and (2) the variance and standard deviation of a population and of a sample.

The sample mean is:

$$\bar{X} = \sum_i^n X_i / n = (-3-11+3-18+18+20-6+9+2-16) / 10 = -2.00 / 10 = -0.20$$

The sample variance is:

$$s^2 = \sum_i^n (X_i - \bar{X})^2 / n - 1$$

The sample standard deviation is the (positive) square root of the sample variance.

12

Value	Diff. from mean [value – (–0.20)]	Difference squared
–3	–2.8	7.84
–11	–10.8	116.64
3	3.2	10.24
–18	–17.8	316.84
18	18.2	331.24
20	20.2	408.04
–6	–5.8	33.64
9	9.2	84.64
2	2.2	4.84
–16	–15.8	249.64
	Sum of squared differences	1,563.6
	Divided by $n - 1$	173.7333333
	Square root	13.18079411

13	"Common Probability Distributions," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA 2012 Modular Level I, Vol. 1, pp. 507-509 Study Session 3-9-f, g Calculate and interpret probabilities, given the discrete uniform and the binomial distribution functions. Construct a binomial tree to describe stock price movement. Across two periods, there are four possibilities: an up move followed by an up move ($96.8 end value), an up move followed by a down move ($79.2 end value), a down move followed by an up move ($79.2 end value), and a down move followed by a down move ($64.8 end value). The probability of an up move followed by a down move is 0.75 times 0.25 equals 0.1875. The probability of a down move followed by an up move is 0.25 times 0.75 also equals 0.1875. Both of these sequences result in an end value of $79.2. Therefore, the probability of an end value of $79.2 is (0.1875 + 0.1875) = 37.5%.
14	"Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA 2012 Modular Level I, Vol. 1, pp. 566-567 Study Session 3-10-i Describe the properties of Student's *t*-distribution and calculate and interpret its degrees of freedom. When the sample size is small, the *t*-distribution is preferred if the variance is unknown.
15	"Hypothesis Testing," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA 2012 Modular Level I, Vol. 1, pp. 599-600 Study Session 3-11-e Explain and interpret the *p*-value as it relates to hypothesis testing. As the *p*-value (0.0567) exceeds the stated level of significance (0.05), we cannot reject the null hypothesis. We therefore accept the null hypothesis.
16	"Technical Analysis," Barry M. Sine, CFA, and Robert A. Strong, CFA 2012 Modular Level I, Vol. 1, p. 662 Study Session 3-12-c Demonstrate the uses of trend, support, and resistance lines, and change in polarity. Support level is defined to be "a low-price range in which buying activity is sufficient to stop the decline in price."

17

"Demand and Supply Analysis: Introduction," Richard V. Eastin and Gary L. Arbogast, CFA
2012 Modular Level I, Vol. 2, pp. 11-13
Study Session 4-13-f
Calculate and interpret individual and aggregate inverse demand and supply functions and individual and aggregate demand and supply curves.

Initial Price Quantity Relationship
$Q^{D}_{Pizza} = 11 - 0.70\ P_{Pizza} + 0.009 \times \$500 - 0.20 \times 1.25 = 15.25 - 0.70\ P_{Pizza}$
Resulting Demand Curve: $P_{Pizza} = 21.79 - 1.43\ Q^{D}_{Pizza}$
Price Quantity Relationship at New Income Level
$Q^{D}_{Pizza} = 11 - 0.70\ P_{Pizza} + 0.009 \times \$700 - 0.20 \times 1.25 = 17.05 - 0.70\ P_{Pizza}$ **Resulting Demand Curve:** $P_{Pizza} = 24.36 - 1.43\ Q^{D}_{Pizza}$
The slope of her demand curve for pizza will still be **–1.43** even with the higher income of $700 as the income effect will result in a parallel shift of the initial demand curve to the right.

18

"Demand and Supply Analysis: Consumer Demand," Richard V. Eastin and Gary L. Arbogast, CFA
2012 Modular Level I, Vol. 2, pp. 71-72
Study Session 4-14-a, b
Describe consumer choice theory and utility theory.
Describe the use of indifference curves, opportunity sets, and budget constraints in decision-making.

As he is indifferent between all three baskets, all three must fall on the same indifference curve. The MRS_{BA} at basket 2 is 4, meaning that the slope of the indifference curve at that point is –4, hence $\Delta A / \Delta B = -4 = (A - 50) / (30 - 35)$: Solve for A = 70: greater than 60.

19

"Demand and Supply Analysis: The Firm," Gary L. Arbogast, CFA, and Richard V. Eastin
2012 Modular Level I, Vol. 2, pp. 120-124
Study Session 4-15-d, e, h
Calculate and interpret total, average, marginal, fixed, and variable costs.
Describe breakeven and shutdown points of production.
Distinguish between short-run and long-run profit maximization.

Revenue-Cost Relationship	**Short-Run Decision**	**Long-Term Decision**
TR ≥ TC	Stay in market	Stay in market
TR > TVC but TR<TFC+TVC	Stay in market	Exit market
TR < TVC	Shut down production to zero	Exit market
where TR = Total Revenue;		
and TC = Total Costs; TVC = Total Variable Costs; TFC = Total Fixed Costs		
Hence, if the selling price is $3.00, total revenue will be $3.00/unit x 900 units = $2,700, only firm X's variable costs are covered and it should continue operating, while firms Y and Z should immediately shutdown production.		

20

"Aggregate Output, Prices, and Economic Growth," Paul R. Kutasovic, CFA, and Richard G. Fritz
2012 Modular Level I, Vol. 2, pp. 220-223
Study Session 4-17-a, c
Calculate and explain gross domestic product (GDP) using expenditure and income approaches.
Compare nominal and real GDP and calculate and interpret the GDP deflator.

	Nominal GDP	**Real GDP**
2010	2,800 x 9 + 2,000 x 47 = 119,200	119,200
2011	3,000 x 11 + 1,800 x 52 = 126,600	3,000 x 9 + 1,800 x 47 = 111,600
GDP Deflator = Nominal GDP/Real GDP x 100 = 126,600/111,600 x 100 = **113.4**		

21

"Monetary and Fiscal Policy," Andrew Clare, PhD, and Stephen Thomas, PhD
2012 Modular Level I, Vol. 2, pp. 409-411
Study Session 5-19-l, n
Describe the tools of fiscal policy including their advantages and disadvantages.
Explain the implementation of fiscal policy and the difficulties of implementation.

The fiscal multiplier is 1÷[1-c(1-T)]		
where		
	c	marginal propensity to consume = consumption ÷ disposable income
	T	the tax rate
Assuming pre-tax income of $100		
Disposable income		$100 x (1 – 0.25) = $75
Marginal propensity to consume		$70÷$75 = 0.933
The fiscal multiplier		1÷[1 – 0.933 x (1 – 0.25)] = 3.33
With government expenditure of $1.25 billion, total incomes and spending will rise by $1.25 Billion x 3.33 = **$4.2 Billion**		

22

"Demand and Supply Analysis: Introduction," Richard V. Eastin and Gary L. Arbogast, CFA
2012 Modular Level I, Vol. 2, pp. 31-36, 41-42
"International Trade and Capital Flows," Usha Nair-Reichert, PhD, and Daniel Robert Witschi, PhD, CFA
2012 Modular Level I, Vol. 2, pp. 452-455
Study Sessions 4-13-j, l; 5-20-d
Describe the impact of government regulation and intervention on demand and supply.
Calculate and interpret consumer surplus, producer surplus, and total surplus.
Compare types of trade and capital restrictions and their economic implications.

The loss in consumer surplus because of higher prices is represented by area E + F + G + H. This exceeds the gains from producer surplus (E) and government revenues on imports (G). Hence the net welfare effect to the country is a loss of [E + F + G + H] – [E] – [G] = **F + H**.

23

"Financial Statement Analysis: An Introduction," Elaine Henry, CFA, and Thomas R. Robinson, CFA
2012 Modular Level I, Vol. 3, p. 31
Study Session 7-22-e
Identify and explain information sources that analysts use in financial statement analysis besides annual financial statements and supplementary information.

Information about management compensation and any potential conflicts of interest that may exist between management and shareholders is typically provided in the proxy statement.

24

"Financial Reporting Mechanics," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2012 Modular Level I, Vol. 3, pp. 46-51
Study Session 7-23-b, e
Explain the accounting equation in its basic and expanded forms.
Explain the relationships among the income statement, balance sheet, statement of cash flows, and statement of owners' equity.

Given Assets = Liabilities + Equity.
First calculate ending equity ($318,000, see calculation below)

$800,000 = liabilities + $318,000
Total liabilities = **$ 482,000**

Contributed capital		$ 50,000
Initial retained earnings		225,000
Sales revenues	450,000	
Investment income	5,000	
Expenses	(402,000)	
Net income for the year	53,000	
Dividends paid	(10,000)	
Increase in retained earnings	43,000	43,000
Ending owners' equity		$318,000

25

"Financial Reporting Standards," Elaine Henry, CFA, Jan Hendrik van Greuning, CFA, and Thomas R. Robinson, CFA
2012 Modular Level I, Vol. 3, pp. 121-123
Study Session 7-24-d
Describe the International Accounting Standards Board's Conceptual Framework, including the objective and qualitative characteristics of financial statements, required reporting elements, and constraints and assumptions in preparing financial statements.

Relevance and faithful representation are the two fundamental qualitative characteristics that make financial information useful according to the IASB Conceptual Framework.

26

"Understanding Income Statements," Elaine Henry, CFA, and Thomas R. Robinson, CFA
2012 Modular Level I, Vol. 3, pp. 202-203
Study Session 8-25-k, l
Describe, calculate, and interpret comprehensive income.
Describe other comprehensive income, and identify the major types of items included in it.

Total comprehensive income = Net income + other comprehensive income
Net Income = revenues – expenses
Other comprehensive income includes gains or losses on available-for-sale securities and translations adjustments on foreign subsidiaries.
(Revenues – expenses) + gain on AFS – loss on FX translation
(12,500 – 10,000) + 1,475 – 325 = 3,650.

27

"Understanding Balance Sheets," Elaine Henry, CFA, and Thomas R. Robinson, CFA
2012 Modular Level I, Vol. 3, pp. 223-225
Study Session 8-26-e
Describe different types of assets and liabilities and the measurement bases of each.

The allowance for doubtful accounts increases by the bad debt expense recognized for the year and decreases by the amounts written off during the year.

Beginning balance allowance	56
Plus bad debt expense	?
Less write-offs	(84)
Ending balance allowance	92
Therefore Bad debt expense = 120	

28

"Understanding Cash Flow Statements," Elaine Henry, CFA, Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, and Michael A. Broihahn, CFA
2012 Modular Level I, Vol. 3, pp. 313-314
Study Session 8-27-i
Calculate and interpret free cash flow to the firm, free cash flow to equity, and performance and coverage cash flow ratios.

Cash flow debt coverage ratio = CFO ÷ Total debt.
105.9 ÷ 512.8 = 20.6%

29

"Inventories," Michael A. Broihahn, CFA
2012 Modular Level I, Vol. 3, p. 410
Study Session 9-29-b
Describe different inventory valuation methods (cost formulas).

Specific identification matches the actual historical costs of the specific inventory items to their physical flow: the costs remain in inventory until the actual identifiable inventory is sold.

30

"Long-Lived Assets," Elaine Henry, CFA, and Elizabeth A. Gordon
2012 Modular Level I, Vol. 3, pp. 445-447
Study Session 9-30-a
Distinguish between costs that are capitalized and costs that are expensed in the period in which they are incurred.

The interest costs can be capitalized. Under IFRS any amounts earned by temporarily investing the funds are deducted from the capitalized amount. The costs related to the preferred shares cannot be capitalized.	
Capitalized costs	
Interest costs	0.08 x 5,000,000 = 400,000
Less interest income	0.07 x 2,000,000 x ½ = (70,000)
Total capitalized costs	330,000

31

"Income Taxes," Elbie Antonites, CFA, and Michael A. Broihahn, CFA
2012 Modular Level I, Vol. 3, p. 509
Study Session 9-31-g
Describe the valuation allowance for deferred tax assets: when it is required and what impact it has on financial statements.

A valuation allowance is required under U.S. GAAP if there is doubt about whether a deferred tax asset will be recovered. Under IFRS the deferred tax asset is written down directly.

32	"Understanding Cash Flow Statements," Elaine Henry, CFA, Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, and Michael A. Broihahn, CFA 2012 Modular Level I, Vol. 3, pp. 273-274, 298-300 "Non-Current (Long-Term) Liabilities," Elizabeth A. Gordon and Elaine Henry, CFA 2012 Modular Level I, Vol. 3, pp. 536-541, 543-546 "Introduction to the Valuation of Debt Securities," Frank J. Fabozzi, CFA 2012 Modular Level I, Vol. 5, pp. 492-498 Study Sessions 8-27-a; 9-32-b, c; 16-57-c, d Compare cash flows from operating, investing, and financing activities and classify cash flow items as relating to one of those three categories given a description of the items. Describe the effective interest method and calculate interest expense, amortisation of bond discounts/ premiums, and interest payments. Explain the derecognition of debt. Calculate the value of a bond (coupon and zero-coupon). Explain how the price of a bond changes if the discount rate changes and as the bond approaches its maturity date. The book value of the bonds on 1 January 2011 is equal to the present value of the remaining coupon payments and principal discounted at the market rate at time of issue (3% per period). Coupon = 0.08 × ½ × 5,000,000 = 200,000; there are 4 years remaining or 8 coupon payments Book value = 200,000 PVAnnuity (n=8, i=3%) + 5,000,000 PV (n=8, i=3%) = 1,403,938 + 3,947,046 = 5,350,984 Using a financial calculator: PMT = 200,000; FV = 5,000,000; I% =3%; N = 8; Compute PV = 5,350,984 Because the market interest rate when the bonds are bought back (8%) is equal to the coupon rate, the company can buy back the bonds at par, $5,000,000 Cost of repurchase $5,000,000 Book value 5,350,984 Gain on retirement 350,984 On the cash flow statement the gain would be deducted from net income in calculating the cash from operations under the indirect method, and the cash paid to repurchase the bonds would be a cash outflow in the financing section.

33

"Understanding Cash Flow Statements," Elaine Henry, CFA, Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, and Michael A. Broihahn, CFA
2012 Modular Level I, Vol. 3, pp. 273-274
"Accounting Shenanigans on the Cash Flow Statement," Marc A. Siegel
2012 Modular Level I, Vol. 3, pp. 612-613
Study Sessions 8-27-a; 10-34
Compare cash flows from operating, investing, and financing activities and classify cash flow items as relating to one of those three categories given a description of the items.
The candidate should be able to analyze and describe the following ways to manipulate the cash flow statement:

- stretching out payables,
- financing of payables,
- securitization of receivables, and
- using stock buybacks to offset dilution of earnings.

The sale of a long-term receivable would increase cash from investing activities; the other two activities mentioned are operating activities.

34

"Understanding Cash Flow Statements," Elaine Henry, CFA, Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, and Michael A. Broihahn, CFA
2012 Modular Level I, Vol. 3, pp. 312-313
"Long-Lived Assets," Elaine Henry, CFA, and Elizabeth A. Gordon
2012 Modular Level I, Vol. 3, pp. 443-446
Study Sessions 8-27-I; 9-30-a
Calculate and interpret free cash flow to the firm, free cash flow to equity, and performance and coverage cash flow ratios.
Distinguish between costs that are capitalized and costs that are expensed in the period in which they are incurred.

Example	Capitalizing delivery cost as opposed to expensing it	
FCFF	CFO + interest × (1– t) – capital expenditures	
	capital expenditures	If capitalized, the amount capitalized increases capital expenditures and is recorded as a cash outflow from investing activities
	CFO	The CFO will be higher by amount capitalized, i.e., the amount not expensed
Since capital expenditures and CFO increase by the same amount, FCFF is unchanged		

35	"Capital Budgeting," John D. Stowe, CFA, and Jacques R. Gagne, CFA 2012 Modular Level I, Vol. 4, pp. 10-13, 19-21 Study Session 11-36-c, d, e Explain how the evaluation and selection of capital projects is affected by mutually exclusive projects, project sequencing, and capital rationing. Calculate and interpret the results using each of the following methods to evaluate a single capital project: net present value (NPV), internal rate of return (IRR), payback period, discounted payback period, and profitability index (PI). Explain the NPV profile, compare NPV and IRR methods when evaluating independent and mutually-exclusive projects, and describe the problems associated with each of the evaluation methods. The NPV of project A is €1,780.59 $1{,}780.59 = -2{,}450 + \frac{345}{(1.08)^1} + \frac{849}{(1.08)^2} + \frac{635}{(1.08)^3} + \frac{3{,}645}{(1.08)^4}$ The NPV of Project B is €1,765.36 $1{,}765.36 = -2{,}450 + \frac{345}{(1.08)^1} + \frac{849}{(1.08)^2} + \frac{1{,}051}{(1.08)^3} + \frac{3{,}175}{(1.08)^4}$ Because Project A has a higher NPV and the projects are mutually exclusive, only Project A should be accepted.
36	"Cost of Capital," Yves Courtois, CFA, Gene C. Lai, and Pamela Peterson Drake, CFA 2012 Modular Level I, Vol. 4, pp. 59-61 Study Session 11-37-h Calculate and interpret the cost of equity capital using the capital asset pricing model approach, the dividend discount model approach, and the bond-yield-plus risk-premium approach. Based on equation (10) with D/E referring to the debt-to-equity ratio: $\beta_{equity} = \beta_{asset} \times \left[1 + \left((1 - tax\ rate) \times \frac{D}{E}\right)\right]$ If the tax rate increases, then the bracketed term decreases, making the equity beta decrease because the asset beta is unchanged.

37	"Dividends and Share Repurchases: Basics," George H. Troughton, CFA, and Gregory Noronha, CFA 2012 Modular Level I, Vol. 4, pp. 142-143 Study Session 11-39-d Calculate and compare the effects of a share repurchase on earnings per share when (1) the repurchase is financed with the company's excess cash and (2) the company uses funded debt to finance the repurchase. Convert the P/E to the earnings yield (E/P): 1 ÷ 12.5 = 8%. Because the after-tax cost of the external funds is higher than the earnings yield (i.e., 9% > 8%), the EPS will decrease after the repurchase.
38	"Working Capital Management," Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and Pamela Peterson Drake, CFA 2012 Modular Level I, Vol. 4, pp. 160-161 Study Session 11-40-a Describe primary and secondary sources of liquidity and factors that influence a company's liquidity position. A "pull" on liquidity occurs when disbursements are made too quickly (e.g., current liabilities are paid instead of being held or when credit availability is reduced or limited). A "drag" on liquidity occurs when receipts lag (i.e., non-cash current assets do not convert to cash quickly). Consequently, a reduction in a credit line is a "pull" on liquidity.
39	"The Corporate Governance of Listed Companies: A Manual for Investors," Kurt Schacht, CFA, James C. Allen, CFA, and Matthew Orsagh, CFA, CIPM 2012 Modular Level I, Vol. 4, pp. 242-243, 245-246 Study Session 11-42-c Describe board independence and explain the importance of independent board members in corporate governance. Under best practices in corporate governance procedures, independent board members should have a "lead" director when the board chair is not independent.
40	"Market Organization and Structure," Larry E. Harris 2012 Modular Level I, Vol. 5, pp. 64-66 Study Session 13-47-l Describe the objectives of market regulation. Regulators impose minimum levels of capital that apply across the board to all regulated firms, not the optimum level that is firm-specific and determined by the firms themselves.

41	"Overview of Equity Securities," Ryan C. Fuhrmann, CFA, and Asjeet S. Lamba, CFA 2012 Modular Level I, Vol. 5, pp. 173-174 Study Session 14-50-a Describe characteristics of types of equity securities. Putable common shares facilitate raising capital because of their appeal to investors over callable common shares. The put feature gives investors the right to sell the shares back to the issuing company when the market price is below the pre-specified put price.
42	"Equity Valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA 2012 Modular Level I, Vol. 5, pp. 297-299 Study Session 14-52-i Explain the use of enterprise value multiples in equity valuation and demonstrate the use of enterprise value multiples to estimate equity value. Enterprise Value (EV) = Market capitalization + MV of debt + MV of preferred stock – cash & short-term investments EV = 45 + 10 – 2.5 = 52.5; EV/EBITDA = 52.5 / 15 = 3.5
43	"Equity Valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA 2012 Modular Level I, Vol. 5, pp. 271, 289-292, 296 Study Session 14-52-h Calculate and interpret the following multiples: price to earnings, price to an estimate of operating cash flow, price to sales, and price to book value. Dividend growth rate = (1 – Payout ratio) × ROE = 0.4 × 12.5 = 5%; Justified forward P/E: $P_0 / E_1 = p / (r – g)$; Where p is the payout ratio = 0.60 / (0.10 – 0.05) = 12x Intrinsic value: $P_0 = P_0 / E_1 \times E_1 = 12 \times \$3 = \$36$

44	"Equity Valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA 2012 Modular Level I, Vol. 5, pp. 277-279 Study Session 14-52-d Calculate the intrinsic value of a non-callable, non-convertible preferred stock. Because the current market value is well below the retraction price, retraction is likely and the preferred share will be priced on the basis of its retraction feature. Quarterly dividend = ($50 × 0.08) / 4 = $1 a share; Quarterly required return = 12% / 4 = 3%; $V_0 = [\$1 / 1.03 + 1 / 1.03^2 + 1 / 1.03^3 + \ldots + 1 / 1.03^{11} + 1 / 1.03^{12} + 50 / 1.03^{12}] = \$45.02$ Using a financial calculator: PMT = $1; N = 12; FV = $50; I = 3%; Compute PV = $45.02
45	"Overview of Equity Securities," Ryan C. Fuhrmann, CFA, and Asjeet S. Lamba, CFA 2012 Modular Level I, Vol. 5, p. 192 "Equity Valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA 2012 Modular Level I, Vol. 5, pp. 292-297 Study Sessions 14-50-g; 14-52-h, i Distinguish between the market value and book value of equity securities. Calculate and interpret the following multiples: price to earnings, price to an estimate of operating cash flow, price to sales, and price to book value. Explain the use of enterprise value multiples in equity valuation and demonstrate the use of enterprise value multiples to estimate equity value. The EV/EBITDA approach is most useful when comparing companies with significant differences in capital structure. EBITDA is computed prior to payment to any of the company's financial stakeholders and is not impacted by the amount of debt leverage.
46	"Derivative Markets and Instruments," Don M. Chance, CFA 2012 Modular Level I, Vol. 6, pp. 7-10 Study Session 17-60-b Define forward contracts, futures contracts, options (calls and puts), and swaps and compare their basic characteristics. A is correct because a swap is a series of forward payments. Specifically, a swap is an agreement between two parties to exchange a series of future cash flows. Given that the contract is for 1 year and the floating rate is based upon 3-month LIBOR, at least 4 payments will be made during the year.

47	"Forward Markets and Contracts," Don M. Chance, CFA 2012 Modular Level I, Vol. 6, p. 37 Study Session 17-61-d Describe the characteristics of equity forward contracts and forward contracts on zero-coupon and coupon bonds. C is correct because the portfolio manager entered into a contract to sell the stock to the dealer at $160 per share in 2 months' time. 31,250 shares × EUR 160 = EUR 5,000,000.
48	"Futures Markets and Contracts," Don M. Chance, CFA 2012 Modular Level I, Vol. 6, p. 60 Study Session 17-62-d Describe price limits and the process of marking to market, and calculate and interpret the margin balance, given the previous day's balance and the change in the futures price. A is correct because the future has a price limit of $5; therefore, it settled at the highest possible level of $111. Therefore, the marked to market value would be ($111 – $106) × 40 = $200.
49	"Investing in Commodities," Ronald G. Layard-Liesching 2012 Modular Level I, Vol. 6, p. 263 Study Session 18-67-a Explain the relationship between spot prices and expected future prices in terms of contango and backwardation. C is correct because when a commodity market is in backwardation, the futures price is below the spot price as market participants believe the spot price will be lower in the future. When spot prices are below the futures price, the market is said to be in contango.
50	"Alternative Investments," Bruno Solnik and Dennis McLeavey 2012 Modular Level I, Vol. 6, pp. 205-207 Study Session 18-66-g Calculate the net operating income (NOI) from a real estate investment, the value of a property using the sales comparison and income approaches, and the after-tax cash flows, net present value, and yield of a real estate investment. A is correct because to arrive at the estimated value of the property, subtract operating expenses from gross income ($625,000 – (3.75% × $625,000) – $65,000 – $27,000 – $62,000 = $447,563). Then divide the net operating income by the cap rate ($447,563 / 0.085) = $5,265,441). Note that neither depreciation nor financing costs are deducted as operating expenses.

51	"Alternative Investments," Bruno Solnik and Dennis McLeavey 2012 Modular Level I, Vol. 6, pp. 216-218 Study Session 18-66-i Calculate the net present value (NPV) of a venture capital project, given the project's possible payoff and conditional failure probabilities. B is correct because you calculate the probability of success as (1-0.35) × (1-0.20) × (1-0.15) × (1-0.15) × (1-0.15) = 0.319345. Then calculate the NPV from success $\frac{7{,}500{,}000}{1.12^5} - 2{,}500{,}000 = 1{,}755{,}701 \times 0.319345 = 560{,}674.$ Subtract the NPV of failure, -2,500,000×(1-0.319345 or 0.680655) = -1,701,638. The difference between the NPVs is the expected NPV of the project, 560,674-1,701,638 = -$1,140,964.
52	"Features of Debt Securities," Frank J. Fabozzi, CFA 2012 Modular Level I, Vol. 5, pp. 335-336 Study Session 15-53-d Explain the provisions for redemption and retirement of bonds. C is correct because a sinking fund provision requires retirement of a portion of the bond issue each year, rather than retirement of the entire issue at maturity.
53	"Risks Associated with Investing in Bonds," Frank J. Fabozzi, CFA 2012 Modular Level I, Vol. 5, pp. 359-363 Study Session 15-54-g Describe yield-curve risk and explain why duration does not account for yield-curve risk. A is correct because duration assumes that all interest rates across the yield curve change by the same amount and therefore each bond's yield changes by the same amount.

54	"Understanding Yield Spreads," Frank J. Fabozzi, CFA 2012 Modular Level I, Vol. 5, pp. 464-465 Study Session 15-56-i Calculate the after-tax yield of a taxable security and the tax-equivalent yield of a tax-exempt security. B is correct because the after-tax yield of the taxable security is lower than the yield on the tax-exempt security for both investors. After-tax yield = Pre-tax yield × (1 – Marginal tax rate). For Investor A, the After-tax yield = 6.30% × (1 – 0.45) = 3.47%. For Investor B, the After-tax yield = 6.30% × (1 – 0.30) = 4.41%. Both are less than 4.50% and the investor will choose the investment with the highest after-tax yield.
55	"Understanding Yield Spreads," Frank J. Fabozzi, CFA 2012 Modular Level I, Vol. 5, pp. 455-456 Study Session 15-56-d Define a spot rate. A is correct because a STRIPS security is a zero-coupon bond with no default risk and therefore represents the appropriate discount rate for a cash flow certain to be received at the maturity date for the STRIPS.
56	"Introduction to the Valuation of Debt Securities," Frank J. Fabozzi, CFA 2012 Modular Level I, Vol. 5, pp. 489-490 Study Session 16-57-c Calculate the value of a bond (coupon and zero coupon). A is correct because $\frac{1{,}476}{(1.05)^1} + \frac{1{,}476}{(1.05)^2} + \frac{1{,}476}{(1.05)^3} + \frac{1{,}476}{(1.05)^4} = 1{,}406 + 1{,}339 + 1{,}275 + 1{,}214 = 5{,}234$

57	"Introduction to the Valuation of Debt Securities," Frank J. Fabozzi, CFA 2012 Modular Level I, Vol. 5, pp. 492-495 Study Session 16-57-d Explain how the price of a bond changes if the discount rate changes and as the bond approaches its maturity date. A is correct because the bond is priced below its par value but will be worth exactly par value at maturity. Over time, assuming a stable discount rate, the value of the bond must rise so that it is equal to par at maturity.
58	"Portfolio Management: An Overview," Robert M. Conroy and Alistair Byrne 2012 Modular Level I, Vol. 4, pp. 296-300 Study Session 12-43-c Describe the steps in the portfolio management process. C is correct. Performance measurement is a part of the feedback step of the portfolio management process.
59	"Portfolio Risk and Return – Part I," Vijay Singal 2012 Modular Level I, Vol. 4, p. 335 Study Session 12-44-c Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data. B is correct. $Cov(A,B) = \rho_{AB}\sigma_A\sigma_B = 0.75 \times 0.4 \times 0.3 = 0.09$
60	Portfolio Risk and Return – Part I," Vijay Singal 2012 Modular Level I, Vol. 4, pp. 373-379 Study Session 12-44-h Describe the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line. A is correct. The optimal risky portfolio lies at the point of tangency between the capital allocation line and the efficient frontier of risk assets.