

### Question #1 of 60

C) remove her name from the report if they release the report with higher earnings estimates.

#### Explanation

The ROS principle of Reasonable and Adequate Basis requires that appropriate due diligence be performed and that recommendations be substantiated. Moreover, the ROS states that supervisory procedures must be in place to ensure compliance with the policy. If the report is released with the supervisor's revision, Blackwell should insist that her name be removed.

#### **For Further Reference:**

Study Session 1, LOS 3.b

SchweserNotes: Book 1 p.81

CFA Program Curriculum: Vol.1 p.212

### Question #2 of 60

B) Follow the same proxy-voting procedures regardless of the nature of the proposal.

#### Explanation

Standard III(A) Loyalty, Prudence, and Care. Unusual proposals, such as hostile takeovers and executive changes, may require more review than routine matters such as renewing stock-repurchase agreements. Money managers should provide a means to review complex proxies. Establishing evaluation criteria and disclosing the firm's proxy voting policies and procedures to clients are basic elements of a proxy-voting policy. Client wishes regarding proxy voting should always be followed.

#### **For Further Reference:**

Study Session 1, LOS 2.a

SchweserNotes: Book 1 p.5

CFA Program Curriculum: Vol.1 p.21

### Question #3 of 60

B) complete an independent and objective analysis of Teos and issue a report accordingly.

#### Explanation

Analysts may undertake research related to firms with which they also have an investment banking relationship. The research must remain objective and unbiased to avoid violating the Research Objectivity Standards. Furthermore, the research report must fully disclose the nature of the investment banking relationship and any potential conflict of interest.

#### **For Further Reference:**

Study Session 1, LOS 3.b

SchweserNotes: Book 1 p.81

CFA Program Curriculum: Vol.1 p.212

### Question #4 of 60

C) No.

#### Explanation

Firms have a fiduciary obligation to their clients to publish adequate and timely information on the companies under coverage. The ROS recommends that firms should publish research reports on covered stocks on a regular basis. At least five months had passed without a published research report from Blanchard regarding a major news story affecting Patel shares. While Baldwin was

correct to discuss the reason for dropping coverage, he did not comply with ROS recommendations because he did not publish a timely and/or final report on Patel. It is recommended that firms publish a final research report when dropping coverage discussing the reason and disclosing the analyst's final rating.

**For Further Reference:**

Study Session 1, LOS 3.b

SchweserNotes: Book 1 p.81

CFA Program Curriculum: Vol.1 p.212

### Question #5 of 60

- B) Execute all clients' requested trades promptly and without comment, regardless of the company's opinion on the stock being traded.

**Explanation**

Standard III(B) Fair Dealing requires firms to notify clients of changes in investment advice before executing trades that go counter to that advice. While equal dissemination is usually impossible, it is an admirable goal. Firms should establish dissemination guidelines that are fair to all clients. Trading disclosures and confidentiality regarding investment rating changes are sensible precautions that meet the spirit of the fair dealing Standard. Maintaining client lists that detail client holdings will simplify the process of deciding how to best disseminate a change in investment recommendation.

**For Further Reference:**

Study Session 1, LOS 2.a

SchweserNotes: Book 1 p.5

CFA Program Curriculum: Vol.1 p.21

### Question #6 of 60

- B) Method 2.

**Explanation**

Method 2 is the best answer. Quintux should cover the cost of the trading error, and if Borchard is willing to accept investment research in lieu of cash, that's all the better for Quintux. If Quintux compensates Borchard with extra trades, its clients are covering the costs of the error, which may violate Standard III(A) Loyalty, Prudence, and Care if directing future trades to Borchard is not in the clients' best interest. By accepting the CBX shares it did not request and allocating the shares to all client accounts rather than paying for the error, Quintux is violating Standard III(C) Suitability, since the shares are not likely to be appropriate for all of its client accounts and may not be suitable for any accounts since the shares were obtained as a result of a trading error, not an intentional investment action. Passing on client names is a violation of Standard III(E) Preservation of Confidentiality.

**For Further Reference:**

Study Session 1, LOS 2.a

SchweserNotes: Book 1 p.5

CFA Program Curriculum: Vol.1 p.21

### Question #7 of 60

- B) Statements 1, 3, and 4 only.

**Explanation**

Statement 1: Correct, although not all the shares will be offered.

- Statement 2: Incorrect because shares are not automatically issued to existing shareholders under a carve-out.
- Statement 3: Correct since the results of the business sector will be more easily identifiable once the sector represents a separate company.
- Statement 4: Correct for all strategies under consideration.
- Statement 5: Incorrect-with a carve-out the "selling" corporation may (usually does) maintain some control of the business that has been split out into a separate company.

**For Further Reference:**

Study Session 8, LOS 26.n

SchweserNotes: Book 2 p.307

CFA Program Curriculum: Vol.3 p.294

### Question #8 of 60

- A) \$5 million                      \$3 million

**Explanation**

Debian s/h gain =  $\text{gain}_T = TP = P_T - V_T = \$90\text{m} - \$85\text{m} = \$5\text{m}$

Fedora s/h gain =  $\text{gain}_A = S - TP = 8 - 5 = \$3\text{m}$

Synergies are not directly given, but you are given that Fedora's value post merger (after paying the \$5m takeover premium) increases by \$3 million. Synergies must then be  $\$5\text{m} + \$3\text{m} = \$8\text{m}$ .

Alternatively, the change in Fedora's value post merger,  $(\$135\text{m} - \$132\text{m}) = \$3\text{m}$ , would give the gains to the acquirer in the case of a cash merger.

Note: The total gains = value of combined entity – value of both companies prior to merger

$(\$135\text{m} + \$90\text{m}) - (\$85\text{m} + \$132\text{m}) = \$8\text{m}$

Note: The value of the combined entity in a stock merger must include the \$90 million in cash that was paid by Fedora to Debian. For computing the total gains to merger in a cash transaction, we need to add the \$90 million that would be paid out to the seller.

**For Further Reference:**

Study Session 8, LOS 26.k

SchweserNotes: Book 2 p.302

CFA Program Curriculum: Vol.3 p.288

### Question #9 of 60

- B) a loss of \$630,000.

**Explanation**

Value of Fedora and Ubuntu post cash acquisition (given) = \$135 million.

Value of Fedora and Ubuntu post stock acquisition = \$135 million + \$90 million cash = \$225 million.

Number of shares outstanding post stock acquisition =  $5 + 3 = 8$  million.

Value of shares received based on their likely post-acquisition price =  $[(\$225\text{m}) / 8\text{m}] \times 3\text{m} = \$84,375,000$ .

Gain to Debian's shareholders is therefore  $\$84,375,000 - \$85,000,000 = -\$625,000$ .

**For Further Reference:**

Study Session 8, LOS 26.k

SchweserNotes: Book 2, p.302

CFA Program Curriculum: Vol.3 p.288

**Question #10 of 60**

**B)** a gain of \$8.6 million.

**Explanation**

New value of their 5m shares =  $(\$225\text{m} / 8\text{m}) \times 5\text{m} = \$140,625,000$

Old value of their 5m shares  $= \$132,000,000$

Gain  $= \$8,625,000$

**For Further Reference:**

Study Session 8, LOS 26.k

SchweserNotes: Book 2, p.302

CFA Program Curriculum: Vol.3 p.288

**Question #11 of 60**

**B)** Only one of these attributes is correct.

**Explanation**

Attribute 1: This attribute is incorrect. An effective corporate governance system defines the rights (not the responsibilities) of shareholders and other stakeholders.

Attribute 2: This attribute is correct. An effective corporate governance system provides for fairness and equitable treatment in all dealings between managers, directors, and shareholders.

**For Further Reference:**

Study Session 8, LOS 25.a

SchweserNotes: Book 2 p.255

CFA Program Curriculum: Vol.3 p.201

**Question #12 of 60**

**C)** \$48                      \$48

**Explanation**

Using comparable company analysis:

Using P/E ratio:  $25 \times 1.50 = 37.50$

Using P/B ratio:  $2 \times 18 = 36.00$

Average  $36.75$

Add: 30% premium  $11.03$

Estimated takeover price  $\$47.78$

Using comparable transaction analysis:

Using P/E ratio:  $30 \times 1.50 = \$45.00$

$$\text{Using P/B ratio: } 2.80 \times 18 = \frac{50.40}{\text{Average}} = \$47.70$$

Note: No additional premium is applied for comparable transactions.

**For Further Reference:**

Study Session 8, LOS 26.j

SchweserNotes: Book 2 p.294

CFA Program Curriculum: Vol.3 p.283

### Question #13 of 60

A) LC7,300,000.

**Explanation**

$$\begin{aligned} \text{FCFE} &= \text{NI} + \text{depreciation} - \text{FCInv} - \text{WCInv} + \text{net borrowing} \\ &= 7.0 + 3.5 - 3.2 - 0.4 + (2.4 - 2.0) \\ &= \text{LC7.3 million, or LC7,300,000} \end{aligned}$$

**For Further Reference:**

Study Session 11, LOS 31.d

SchweserNotes: Book 3, p.118

CFA Program Curriculum: Vol.4 p.273

### Question #14 of 60

C) LC10,200,000.

**Explanation**

$$\text{FCFF} = \text{FCFE} + \text{Int}(1 - \text{tax rate}) - \text{net borrowing} = 7.3 + 5.0(1 - 0.34) - (2.4 - 2.0) = \text{LC10.2 million, or LC10,200,000.}$$

**For Further Reference:**

Study Session 11, LOS 31.d

SchweserNotes: Book 3, p.118

CFA Program Curriculum: Vol.4 p.273

### Question #15 of 60

A) LC150,380,000.

**Explanation**

Given the assumptions stated in the problem, this is a simple single stage valuation. Using the firm's modified build-up methodology, the real required rate of return is 8% (= country real rate +

industry adjustment + firm adjustment = 3% + 3% + 2%). The real growth rate is  $\left[ \left( \frac{1.12}{1.08738} \right) - 1 \right] = 3\%$ . FCFE is LC7,300,000 from an earlier question.

Hence, the value of PCC equity is:

$$V_0 = \frac{\text{FCFE} \times (1 + g)}{r - g} = \frac{7,300,000 \times 1.03}{0.08 - 0.03} = \text{LC150,380,000}$$

**For Further Reference:**

Study Session 11, LOS 31.j

### Question #16 of 60

C) The dividend has no effect, and the debt change has a small effect.

#### Explanation

*Dividend policy change:* A change in dividend policy will have no direct impact on future FCFE. Note that dividend payments are a use of equity cash flows, not a reduction in FCFE. It is possible that an increase in dividends could reduce the long-term growth rate of the firm, thus reducing firm value. However, holding all other factors constant, an increase in dividends will not affect FCFE forecasts.

*Net change in debt:* The increase in debt, LC400,000, will increase future interest expense and decrease future FCFE, but the amount is small, relative to net income of LC7,000,000.

#### **For Further Reference:**

Study Session 11, LOS 31.g  
SchweserNotes: Book 3 p.123  
CFA Program Curriculum: Vol.4 p.299

### Question #17 of 60

B) FCFE approach.

#### Explanation

Since the company's capital structure is reasonably stable and FCFE is positive, FCFE is a simpler approach to valuation than FCFF, EVA, or residual income, and is preferred in this case.

#### **For Further Reference:**

Study Session 11, LOS 31.a  
SchweserNotes: Book 3 p.110  
CFA Program Curriculum: Vol.4 p.269

### Question #18 of 60

C) Both statements are correct.

#### Explanation

Both statements are correct. EBITDA is in fact a poor proxy for FCFF because it does not incorporate the cash taxes paid by the firm. EBITDA also fails to reflect the investment in working capital and the investment in fixed capital. EBITDA is an even worse proxy for FCFE than as a proxy for FCFF. EBITDA does not reflect after-tax interest costs or other cash flows that shareholders care about, such as new borrowing or the repayment of debt.

#### **For Further Reference:**

Study Session 11, LOS 31.h  
SchweserNotes: Book 3 p.123  
CFA Program Curriculum: Vol.4 p.300

### Question #19 of 60

A) \$87,728.

#### Explanation

Free cash flow to the firm can be calculated in various ways. One approach to calculate FCFF is to start with net income:

$$\text{FCFF} = \text{NI} + \text{NCC} + \text{Int}(1 - \text{tax rate}) - \text{FCInv} - \text{WCInv}$$

$$\text{NI} = \$164,497 \quad (\text{income statement})$$

$$\text{NCC} = \text{Noncash charges} = \$56,293 \quad (\text{income statement})$$

$$\text{Int} = \text{Interest} = \$20,265 + \$5,223 = \$25,488 \quad (\text{income statement})$$

$$\text{FCInv} = \text{Fixed capital investment} = \$143,579 \quad (\text{additional information})$$

$$\text{WCInv} = \text{Working capital investment} = \$7,325 \quad (\text{additional information})$$

Putting it all together:

$$\text{FCFF} = \$164,497 + \$56,293 + \$25,488(1 - 0.3) - \$143,579 - \$7,325 = \$87,728$$

**For Further Reference:**

Study Session 11, LOS 31.d

SchweserNotes: Book 3, p.118

CFA Program Curriculum: Vol.4 p.273

### Question #20 of 60

B) \$45,251.

**Explanation**

FCFE can be expressed in terms of FCFF as follows:

$$\text{FCFE} = \text{FCFF} - \text{Int}(1 - \text{tax rate}) + \text{net borrowing}$$

Therefore, the amount by which FCFF exceeds FCFE can be written as:

$$\text{FCFF} - \text{FCFE} = \text{Int}(1 - \text{tax rate}) - \text{net borrowing}$$

$$\text{Int} = \$25,488$$

$$\text{Net borrowing} = \$5,866 - \$33,275 = -\$27,409 \quad (\text{additional information})$$

$$\text{Therefore: } \text{FCFF} - \text{FCFE} = \$25,488(1 - 0.3) - (-\$27,409) = \$45,251$$

**For Further Reference:**

Study Session 11, LOS 31.d

SchweserNotes: Book 3, p.118

CFA Program Curriculum: Vol.4 p.273

### Question #21 of 60

B) 10%                      8%

**Explanation**

The cost of equity can be determined from the capital asset pricing model. We get:

$$r = R_f + \text{beta}[\text{market risk premium}] = 4.5\% + 1.10[5\%] = 10\%.$$

The sustainable growth rate can be found from:  $g = \text{ROE} \times b$

$$\text{ROE} = \frac{\text{net income}}{\text{beginning total equity}} = \frac{\$164,497}{\$1,019,869} = 0.16129$$

$$b = \text{retention rate} = 1 - (\$82,248.50 / \$164,497) = 0.5$$

$$g = 0.16129 \times 0.5 = 0.0806 = 8.06\%$$

**For Further Reference:**

Study Session 10, LOS 30.o

SchweserNotes: Book 3 p.89

CFA Program Curriculum: Vol.4 p.239

## Question #22 of 60

A) \$191,646.

**Explanation**

When depreciation is the only noncash charge, FCFF can be estimated from:

$$\text{FCFF} = \text{EBIT}(1 - \text{tax rate}) + \text{Dep} - \text{FCInv} - \text{WCInv}$$

$$\text{EBIT}_{2009} = \$4,052,173 \times 1.06 \times 0.064 = \$274,899$$

$$\text{Therefore: FCFF}_{2009} = \$274,899 (1 - 0.3) + \$60,000 - \$36,470 - \$24,313 = \$191,646$$

**For Further Reference:**

Study Session 11, LOS 31.d

SchweserNotes: Book 3, p.118

CFA Program Curriculum: Vol.4 p.273

## Question #23 of 60

A) \$4.37.

**Explanation**

This is a two-stage FCFE model. The required return on equity is 10% (from previous problem), and the long-term growth rate after 2 years is 5%.

$$\begin{aligned} \text{value of equity} &= \frac{\$0.21}{1.1} + \frac{\$0.23}{1.1^2} + \left( \frac{\$0.23 \times 1.05}{0.1 - 0.05} \times \frac{1}{1.1^2} \right) \\ &= \frac{\$0.21}{1.1} + \frac{\$0.23}{1.1^2} + \left( \$4.83 \times \frac{1}{1.1^2} \right) = \$4.37 \end{aligned}$$

Financial calculators can perform this calculation more quickly and accurately. The appropriate keystrokes are:

$$\text{CFO} = 0; \text{C01} = \$0.21; \text{C02} = \$0.23 + \$4.83 = \$5.06; \text{I} = 10.0; \text{CPT} \rightarrow \text{NPV} = \$4.37$$

Notice that the second cash flow combines the FCFE for the second year with the present value of the series of constantly growing FCFE terms that begin at the end of the third year. This approach is valid since the timing of these two cash flows is the same (i.e., the end of the second year).

**For Further Reference:**

Study Session 11, LOS 31.j

SchweserNotes: Book 3 p.127

CFA Program Curriculum: Vol.4 p.304

## Question #24 of 60

C) Convertible bond issue.



**Explanation**

Dividends, share repurchases, and changes in the number of shares outstanding do not have an effect on either FCFE or FCFF. Therefore, only the new convertible debt offering will have a significant influence on the current level of FCFE because net borrowing changes FCFE.

**For Further Reference:**

Study Session 11, LOS 31.i

SchweserNotes: Book 3 p.124

CFA Program Curriculum: Vol.4 p.304

**Question #25 of 60**

B) €488 million.

**Explanation**

FCFE = CFO - FCInv + Net borrowings

CFO = 1042 (given), Net borrowings is change in long-term debt and notes payable.

FCInv = CF from investing = 648

FCFE =  $1042 - 648 + [(2,070 + 644) - (2,020 + 600)] = €488 \text{ million.}$

Please note that CF from investing activities and FCInv may not be always the same, but in the curriculum (and for this question), they are treated as same.

**For Further Reference:**

Study Session 11, LOS 31.d

SchweserNotes: Book 3, p.118

CFA Program Curriculum: Vol.4 p.273

**Question #26 of 60**

A) €17.2 billion.

**Explanation**

FCFF = CFO +  $\text{Int}(1 - \text{Tax rate}) + \text{FCInv} = 1042 + 150(0.7) - 648 = €499$

Overall growth rate for cosmetics industry = 3.5%

	<i>Percentage</i>	<i>Cost</i>
Debt	50%	4.50%
Equity	50%	8.50%
WACC		6.50%
Cosmetics industry growth rate		3.50%
$\frac{499 \times (1 + 0.035)}{0.065 - 0.035} = 17,216 \text{ million}$		

**For further reference:**

Study Session 11, LOS 31.i, j

SchweserNotes: Book 3 p.124, 127

CFA Program Curriculum: Vol.4 p.304

**Question #27 of 60**

B) €21.40.

**Explanation**

To value Hermosa stock, use the following information and apply the two-stage growth model. FCFE for the fiscal year is €136 million. Growth rate for the first 3 years is 14.0%; growth rate after 3 years is 5.5%. For CAPM, expected return on market = 8.5% (since Schön with a beta of 1 should have the same expected rate of return as the market).

Cost of equity (Hermosa) =  $0.025 + 1.2 \times (0.085 - 0.025) = 9.70\%$ .

	<i>Yr 1</i>	<i>Yr 2</i>	<i>Yr 3</i>
FCFE (in € millions) <sup>1</sup>	155.3	177.0	201.8
Terminal Value			5,069 <sup>2</sup>
Total cash flow (in € millions)	155.3	177.0	5,270.8
Cost of Equity		9.70%	

<sup>1</sup> $FCFE_1 = FCFE_0(1 + g) = 136.23(1 + 0.14) = 155.3$

<sup>2</sup>Terminal value =  $\frac{201.8(1.055)}{(0.097 - 0.055)} = 5069$

For the calculator inputs for NPV function, CF0 = 0, CF1 = 155.3, CF2 = 177.0, CF3 = 5,270.5

I/Y = 9.7

Estimated value is €4,281.26 million. Divide this value by 200 million shares for €21.40 per share.

#### For further reference:

Study Session 12, LOS 31.j

SchweserNotes: Book 3 p.127

CFA Program Curriculum: Vol.4 p.304

### Question #28 of 60

B) undervalued.

#### Explanation

Free cash flow to equity values Schön's stock at €17,100,000,000 / 1,000,000,000 or €17.10 per share. This is greater than the market price per share of €15.42; the stock is selling at a price below the implied value which means the stock is undervalued.

#### For further reference:

Study Session 11, LOS 31.m

SchweserNotes: Book 3 p.135

CFA Program Curriculum: Vol.4 p.308

### Question #29 of 60

A) overvalued.

#### Explanation

The luxury skin care segment's price-to-earnings ratio is 22.9X. The trailing P/E ratio for Hermosa is €22.78 divided by the earnings per share of €193 / 200 or €0.97. Trailing P/E = €22.78 / €0.97 = 23.6X. Hermosa seems to be slightly overvalued relative to the segment.

#### For further reference:

Study Session 11, LOS 32.a

SchweserNotes: Book 3 p.154

CFA Program Curriculum: Vol.4 p.347

### Question #30 of 60

**B)** Approach #2-Free cash flow to the firm model.

**Explanation**

Approach #2 is the best. The free cash flow to firm approach takes a control perspective in valuation as is appropriate in a buyout. Dividend discount models take a minority perspective, and Hermosa does not pay dividends so Approach #1 is unsuitable. Relative valuation approaches, such as trailing P/E, also focus on market price and hence are based on minority investor perspective.

**For further reference:**

Study Session 11, LOS 32.d, f  
SchweserNotes: Book 3 p.156, 164  
CFA Program Curriculum: Vol.4 p.353, 359

**Question #31 of 60**

**B)** overvalued.

**Explanation**

Since the required return (12%) as determined by CAPM is greater than Lear's expected return (10%), then Taylor's stock is overvalued.

**For Further Reference:**

Study Session 9, LOS 28.a  
SchweserNotes: Book 3 p.13  
CFA Program Curriculum: Vol.4 p.51

**Question #32 of 60**

**A)** 9.4%.

**Explanation**

Required return under FFM = risk-free rate + market beta (equity risk premium) + size beta (small-cap return premium) + value beta (value-return premium)

$$= 3.4\% + 0.7(5.5\%) + -0.3(3.1\%) + 1.4(2.2\%) = 9.4\%$$

Note: The liquidity factor is only applicable to the Pastor-Stambaugh (PS) model. The PS model is otherwise the same as the FFM, save for the addition of the liquidity factor.

**For Further Reference:**

Study Session 9, LOS 28.d  
SchweserNotes: Book 3 p.24  
CFA Program Curriculum: Vol.4 p.70

**Question #33 of 60**

**B)** Forward-looking estimate.

**Explanation**

The Gordon growth model is a popular method to generate forward-looking estimates using current information and expectations concerning economic and financial variables.

A historical estimate of the equity risk premium consists of the difference between the historical mean return for a broad-based equity market index and a risk-free rate over a given time period.

A macroeconomic model estimate of the equity risk premium is based on the relationships between macroeconomic variables and financial variables.

**For Further Reference:**

Study Session 9, LOS 28.b, c, d

SchweserNotes: Book 3 p.15, 19, 24

CFA Program Curriculum: Vol.4 p.56, 69, 70

### Question #34 of 60

A) Build-up method.

**Explanation**

The build-up method is usually applied to closely held companies (such as Densmore) where betas are not readily obtainable.

The risk premium approach requires betas for its calculations; betas are generally not readily available for closely held companies.

The bond-yield plus risk premium method is appropriate only if the company has publicly traded debt. The method simply adds a risk premium to the yield to maturity of the company's long-term debt.

**For Further Reference:**

Study Session 9, LOS 28.d

SchweserNotes: Book 3 p.24

CFA Program Curriculum: Vol.4 p.70

### Question #35 of 60

A) Both statements are incorrect.

**Explanation**

Neither of Saunder's statements is correct. *Confidence risk* represents the unexpected change in the difference between the return of risky corporate bonds and government bonds. *Business cycle risk* represents the unexpected change in the level of real business activity.

**For Further Reference:**

Study Session 9, LOS 28.d

SchweserNotes: Book 3 p.24

CFA Program Curriculum: Vol.4 p.70

### Question #36 of 60

C) A weakness of build-up models is that they typically use historical values as estimates that may not be relevant to current market conditions.

**Explanation**

A weakness (not strength) of the CAPM is its low explanatory power in some cases. Multifactor models usually have higher explanatory power than the CAPM since they use more than one factor, whereas CAPM uses only one factor.

A weakness (not strength) of multifactor models is that they are typically more complex to use.

**For Further Reference:**

Study Session 9, LOS 28.f

SchweserNotes: Book 3 p.26

CFA Program Curriculum: Vol.4 p.87

### Question #37 of 60

A) 2.26%.

#### Explanation

We have to bootstrap the three-year spot rate (S<sub>3</sub>) given the par curve.

S<sub>1</sub> = par rate for a one-year bond = 1.50%.

$$\text{Value of two-year (par) bond} = 100 = \frac{2}{(1+S_1)} + \frac{102}{(1+S_2)^2} = \frac{2}{(1.015)} + \frac{102}{(1+S_2)^2}$$

Hence,  $(1 + S_2)^2 = 102 / 98.03 = 1.04$  and  $S_2 = 2.005\%$

Value of a three-year (par) bond = 100

$$= \frac{2.25}{(1+S_1)} + \frac{2.25}{(1+S_2)^2} + \frac{102.25}{(1+S_3)^3} = \frac{2.25}{(1.015)} + \frac{2.25}{(1.02005)^2} + \frac{102.25}{(1+S_3)^3}$$

Hence,  $(1+S_3)^3 = 102.25 / 95.62 = 1.0693$  and  $S_3 = 2.259\%$

#### For Further Reference:

Study Session 12, LOS 35.c

SchweserNotes: Book 4 p.5

CFA Program Curriculum: Vol.5 p.14

### Question #38 of 60

C) 2.77%.

#### Explanation

$$[1+f(2,1)]^1 = (1 + S_3)^3 / (1 + S_2)^2$$

From the earlier computations, we know that  $S_2 = 2.005\%$  and  $S_3 = 2.259\%$ .

$$[1+f(2,1)]^1 = (1.02259)^3 / (1.02005)^2 = 1.0277 \rightarrow f(2,1) = 2.77\%$$

#### For Further Reference:

Study Session 12, LOS 35.c

SchweserNotes: Book 4 p.5

CFA Program Curriculum: Vol.5 p.14

### Question #39 of 60

B) \$0.8558.

#### Explanation

$F_{(3,3)} = \$0.9151$  (given)

$$P_3 = 1 / (1 + S_3)^3 = 1 / (1.02259)^3 = \$0.9352$$

$$P_6 = F_{(3,3)} \times P_3 = 0.9151 \times 0.9352 = \$0.8558$$

#### For Further Reference:

Study Session 12, LOS 35.b

SchweserNotes: Book 4 p.3

CFA Program Curriculum: Vol.5 p.7

### Question #40 of 60

C) both the one-year and three-year par rates.

### Explanation

Bond A is a three-year bond, callable in one year. Callable bonds are sensitive to par rates corresponding to their call date (particularly if their coupon rate is relatively high) and to the par rates corresponding to their maturity date (especially if the coupon rate is relatively low).

### For Further Reference:

Study Session 12, LOS 35.k

SchweserNotes: Book 4 p.20

CFA Program Curriculum: Vol.5 p.37

## Question #41 of 60

A) Bond A                      Bond A

### Explanation

Callable bonds exhibit negative convexity due to price compression that occurs when the call option is in the money. Hence, bond A would exhibit negative convexity. Also, the upside potential for a callable bond (that is realized when interest rates fall) is limited due to the embedded short call.

### For Further Reference:

Study Session 12, LOS 35.k,l

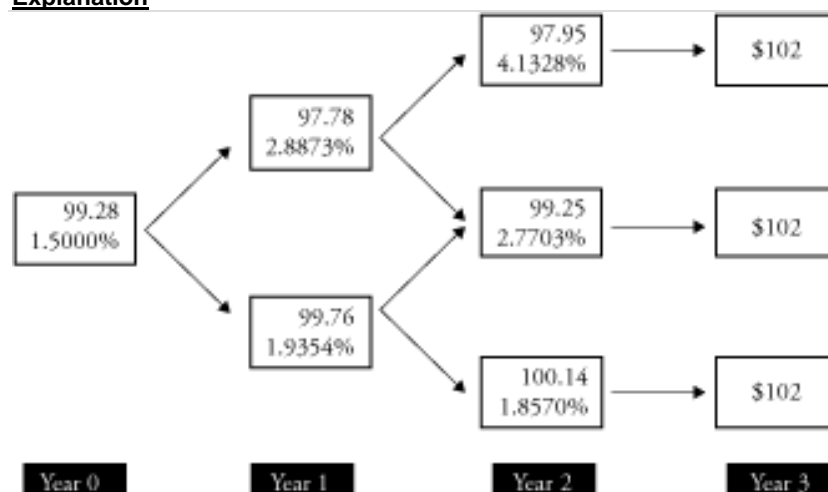
SchweserNotes: Book 4 p.20,22

CFA Program Curriculum: Vol.5 p.37,44

## Question #42 of 60

C) \$99.28.

### Explanation



$$V_{1,U} = \frac{102}{(1.041328)} = \$97.95$$

$$V_{1,D} = \frac{102}{(1.027703)} = \$99.25$$

$$V_{2,U} = \frac{102}{(1.01857)} = \$100.14$$

$$V_{1,L} = 0.5 \left( \frac{99.25 + 2 + 100.14 + 2}{(1.019354)} \right) = \$99.76$$

$$V_{UD} = 0.5 \left( \frac{99.25 + 2 + 97.95 + 2}{(1.028873)} \right) = \$97.78$$

$$V_O = 0.5 \left( \frac{99.78 + 2 + 99.76 + 2}{(1.015)} \right) = \$99.28$$

Note that the option was never exercised.

**For Further Reference:**

Study Session 12, LOS 37.c

SchweserNotes: Book 4 p.55

CFA Program Curriculum: Vol.5 p.116

### Question #43 of 60

B) \$59,000 and is smaller using Dec 39 puts.

**Explanation**

Expected stock price:	$(0.2 \times 42) + (0.2 \times 44) + (0.6 \times 36)$	= \$38.80
Expected loss using Dec 39:	$[(41.28 - 39) + 4.20] \times 140,000$	= \$907,200
Expected loss using Dec 38:	$[(41.28 - 38) + 3.62] \times 140,000$	= \$966,000
Dec 39 loss smaller by:	$966,000 - 907,200$	= \$58,800

**For Further Reference:**

Study Session 14, LOS 42.e

SchweserNotes: Book 4, p.207

CFA Program Curriculum: Vol.5 p.402

### Question #44 of 60

C) incorrectly as AHI would receive the floating rate plus the negative equity return.

**Explanation**

To hedge the return on an equity portfolio, AHI would pay equity and receive the floating rate (LIBOR). However, if the return on the equity portfolio was negative, it would receive this return (i.e., "pay" a negative return) and also receive 90-day LIBOR.

**For Further Reference:**

Study Session 14, LOS 42.a

SchweserNotes: Book 4, p.200

CFA Program Curriculum: Vol.5 p.388

### Question #45 of 60

C) incorrectly with regard to the number of contracts.

**Explanation**

The number of contracts required is based on the multiplier and the current price of the index. Given the index level is 2,250, the number of contracts required is:

$$\$10,000,000 / (\$250 \times 2,250) = 17.77.$$

**For Further Reference:**

Study Session 14, LOS 42.a

SchweserNotes: Book 4, p.200

CFA Program Curriculum: Vol.5 p.388

### Question #46 of 60

A) incorrect as a decrease in price of only 10% would lead to a loss.

#### Explanation

Current stock price = \$79

Price after a 10% decrease =  $79 \times 0.9 = \$71.10$

Price after a 10% increase =  $79 \times 1.10 = \$86.90$

Call option with intrinsic value of \$1:

Intrinsic value = stock price - exercise price

or \$1.00 =  $79 - \text{exercise price}$

Exercise price = \$78.00

A long straddle involves buying a put and call at the same strike with the same expiry; hence, Ramiro will use Dec 78 calls and Dec 78 puts.

Total premium paid =  $4.60 + 3.22 = 7.82$

Breakeven prices:  $= 78 + 7.82 = 85.82$   
 $= 78 - 7.82 = 70.18$

For a 10% decrease in price to \$71.10, the straddle would not breakeven (loss of \$0.92). For a 10% increase in price to \$86.90, the straddle would show a profit (profit of \$1.08).

#### **For Further Reference:**

Study Session 14, LOS 42.g

SchweserNotes: Book 4, p.210

CFA Program Curriculum: Vol.5 p.413

### Question #47 of 60

B) a short calendar spread with an initial cash inflow of \$0.77.

#### Explanation

A short calendar spread using calls involves buying (long) the short dated call option and selling (short) the longer dated call option. This would result in an inflow of  $3.62 - 2.85 = \$0.77$ .

#### **For Further Reference:**

Study Session 14, LOS 42.i

SchweserNotes: Book 4, p.218

CFA Program Curriculum: Vol.5 p.420

### Question #48 of 60

C) long Dec 82 put.

#### Explanation

The payoff on a synthetic call is replicated using a long position in the underlying stock plus a long position in corresponding put option.

Alternatively, if Ramiro's position moved by \$4.20 as a result of a \$10.00 movement in the underlying stock, his position must have a delta of  $\$4.20 / \$10.00 = 0.42$ .



This corresponds to a Dec 82 call option delta. The synthetic call is made up of the long underlying and long Dec 82 put. Note that the delta of this position is also 0.42 (the underlying has a delta of 1, the put delta is -0.58).

**For Further Reference:**

Study Session 14, LOS 42.b

SchweserNotes: Book 4, p.202

CFA Program Curriculum: Vol.5 p.394

### Question #49 of 60

**B)** \$8.86.

**Explanation**

For two up-moves,  $45(1.15)^2 = \$59.51$ . For two down-moves,

$$45(0.87)^2 = 34.06.$$

For two up-moves, the intrinsic call value is  $\$59.51 - \$40 = \$19.51$ .

For two down-moves, the call is out-of-the-money, intrinsic value = \$0. For an up and a down-move the stock price is unchanged at 45, so the intrinsic value of the calls is  $\$45.00 - \$40.00 = \$5$ .

The risk neutral probabilities for the decision tree:  $\pi_U = \frac{1.04 - 0.87}{1.15 - 0.87} = 0.607$  and  $\pi_D = 1 - \pi_U = 0.393$ .

The probability weighted present value of the option payoff if there are two up-moves

$$\text{is } \frac{0.607^2 (19.51)}{1.04^2} = \$6.65.$$

For up-down and down-up (which are equal probabilities), the probability weighted present value

$$\text{of the payoff is } \frac{(2)(0.607)(0.393)(\$5.00)}{1.04^2} = \$2.21.$$

Sum these to get the option value, \$8.86.

**For Further Reference:**

Study Session 14, LOS 41.b

SchweserNotes: Book 4 p.162

CFA Program Curriculum: Vol.5 p.336

### Question #50 of 60

**C)** short 1,205 calls.

**Explanation**

To form a delta neutral portfolio Loper needs to write  $\frac{1,000}{0.83} = 1,204.82$ , or 1,205 calls.

**For Further Reference:**

Study Session 14, LOS 41.m

SchweserNotes: Book 4 p.186

CFA Program Curriculum: Vol.5 p.370

### Question #51 of 60

B) \$6.86.

#### Explanation

The payoff is zero for a down-move and 11.75 for an up-move. Since the probability of an up-move is 0.607, the present value is  $\frac{(0.607)11.75}{1.04} = \$6.86$ .

#### **For Further Reference:**

Study Session 14, LOS 41.b

SchweserNotes: Book 4 p.162

CFA Program Curriculum: Vol.5 p.336

### Question #52 of 60

B) \$0.00.

#### Explanation

The possibility of early exercise is not valuable for call options on non-dividend paying stocks, so the value of the American call is the same as the value of the European call, and the difference in value is zero.

#### **For Further Reference:**

Study Session 14, LOS 41.b

SchweserNotes: Book 4 p.162

CFA Program Curriculum: Vol.5 p.336

### Question #53 of 60

C) No, because the volatility of the return on the underlying stock is assumed to be known and constant.

#### Explanation

The first assumption listed in the vignette should read, "The volatility of the return on the underlying stock is known and constant." The other listed assumptions are correct.

#### **For Further Reference:**

Study Session 14, LOS 41.g

SchweserNotes: Book 4 p.174

CFA Program Curriculum: Vol.5 p.352

### Question #54 of 60

B) Only the calls are overvalued.

#### Explanation

Dividends on the underlying stock decrease the value of call options and increase the value of put options, all else equal. By ignoring them in his valuation, Loper will likely overvalue a long call option and undervalue a long put.

#### **For Further Reference:**

Study Session 14, LOS 41.b

SchweserNotes: Book 4 p.162

CFA Program Curriculum: Vol.5 p.336

### Question #55 of 60

C) Only Statement 4 is correct.

#### Explanation

The investment process requires consideration of risk and return concurrently. While maximization of returns is always preferable, an investor's risk tolerance must also be determined and included in the investment decision. Recall that risk and return objectives are closely related to one another because of the trade-off between risk and return. Therefore, Statement 1 is incorrect, and Statement 4 is correct.

#### **For Further Reference:**

Study Session 16, LOS 47.e

SchweserNotes: Book 5 p.130

CFA Program Curriculum: Vol.6 p.247

### Question #56 of 60

C) Behavioral factors.

#### Explanation

Specific factors that determine an investor's ability to accept risk include required spending needs, financial strength, and long-term wealth targets. Behavioral factors affect an individual investor's willingness to accept risk.

#### **For Further Reference:**

Study Session 16, LOS 47.e

SchweserNotes: Book 5 p.130

CFA Program Curriculum: Vol.6 p.247

### Question #57 of 60

C) Only Statement 3 is correct.

#### Explanation

Strategic asset allocation requires investment managers to consider all sources of income and risk. It also requires an analysis of capital market conditions and specific risk and return characteristics of individual assets. Therefore, Statement 2 is incorrect, and Statement 3 is correct.

#### **For Further Reference:**

Study Session 16, LOS 47.d

SchweserNotes: Book 5 p.129

CFA Program Curriculum: Vol.6 p.244

### Question #58 of 60

C) Investors should rely on accountants or other advisors for tax advice; portfolio managers should focus on finding undervalued investments and not be distracted by tax considerations.

#### Explanation

Responses A and B are appropriate considerations related to tax considerations. Although investors should rely on accountants and other advisors for tax advice, portfolio managers also need to pay attention to the tax consequences of their investment recommendations and relay those consequences to the investor so proper tax planning can occur.

**For Further Reference:**

Study Session 16, LOS 47.e

SchweserNotes: Book 5 p.130

CFA Program Curriculum: Vol.6 p.247

**Question #59 of 60**

A) legal and regulatory constraints.

**Explanation**

The most important portfolio constraints faced by individual investors include liquidity, investment horizon, and unique needs. Legal and regulatory factors are less important for individual investors than they are for institutional investors.

**For Further Reference:**

Study Session 16, LOS 47.e

SchweserNotes: Book 5 p.130

CFA Program Curriculum: Vol.6 p.247

**Question #60 of 60**

B) Assurances of minimum returns so clients will be better able to ensure their financial goals are met over the long run.

**Explanation**

Investment policy statements should be transportable, foster discipline, and discourage short-term strategy shifts.

**For Further Reference:**

Study Session 16, LOS 47.c

SchweserNotes: Book 5 p.129

CFA Program Curriculum: Vol.6 p.241