16. (2.25 points)

a. (1.5 points)

Identify and briefly describe the three components required to estimate the fair value of insurance liabilities under U.S. Purchase GAAP.

b. (0.75 point)

Briefly describe an approach for determining each of the components identified in part a. above.

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WP RBC After LS Discount 24 12.8 - .54 = 12.26

Premium Concentration Adj.

Premium Concentration Factor $.3 * \frac{135}{235} + .7 = .872$

WP RBC After Prem Concentration Factor .872*(24+12.26) = 31.62

Excessive Premium Growth Charge

Annual Growth (All Lines Direct WP)

2015 $\frac{245}{213} = 15.0\%$

Avg(15%,10.2%,8.5%) = 11.2%

2016 $\frac{270}{245} = 10.2\%$

Excessive Growth Factor = (11.2% - 10%)*.225*(100+135) = .66

2017 $\frac{293}{270} = 8.5\%$

Total Written Premium RBC Charge = 31.62 + .66 = 32.3

EXAMINER'S REPORT

Candidates were expected to have an understanding of financial reporting details and be able to calculate the base RBC Charge for Written Premium. Candidates also needed to exhibit an understanding of the adjustments to the base RBC Charge that are required when an insurance company has written premium on retro plans, adjust for the concentration of premium, and exhibits excessive growth year over year.

Common mistakes include:

- Not using a 10 year avg. Company LLAE Ratio
- Excluding or adjusting to a level other than 300% for 2012 CMP LLAE Ratio
- Applying incorrect Industry LLAE Ratio to adjust Company LLAE Ratio
- Adding Loss Sensitive Discount calculated versus subtracting it
- Applying the Loss Sensitive Discount to Net WP rather than base WP RBC
- Using Net Written Premium to calculate annual growth rates
- Not combining CMP and WC premiums to calculate annual growth rates
- Failure to apply Growth factor after all other adjustments

SPRING 2019 EXAM 6US, QUESTION 16	
TOTAL POINT VALUE: 2.25	**LEARNING OBJECTIVE: C3**
SAMPLE ANSWERS	
Part a: 1.5 points	

SAMPLE ANSWERS AND EXAMINER'S REPORT

Bolded sample answers indicate unique subject responses, all three of which were required. Italicized sample answers are common variations on the unique response.

- **Timing and magnitude of expected cash flows**
    - *The expected value of nominal future cash flows associated with the liability*
    - *Unpaid loss, LAE and the timing of payments*
    - *Amounts and timing of future payments*
    - *Reserve and associated payment pattern*
- **Discount rate & liquidity provision**
    - *The reduction due to discounting for time value of money, as well as a rate to reflect the illiquidity of the liabilities*
    - *Discount + illiquidity premium*
    - *Present value at (risk-free rate + liquidity)*
- **Risk adjustment associated with liabilities**
    - *A risk adjustment to compensate the investor for bearing the risk associated with the liabilities*
    - *Risk margin to protect against adverse development*
    - *Risk load demanded by investors for use of capital*
    - *Additional load due to risky nature of insurance liabilities*

Part b: 0.75 point

Sample responses for "Timing and magnitude of expected cash flows"

- Use company loss pattern to project payments
- Use development factors from company's Schedule P
- Apply a loss payment pattern to the current reserve amount
- Cash flows can be derived from current recorded reserves if booked values are unbiased
- Estimate future cash flows from history of paid-to-ultimate ratios
- Use industry LDFs to generate payment stream

Sample responses for "Discount rate & liquidity premium"

- Use the risk-free rate to discount liabilities
- Risk free rates combined with liquidity premium
- Use duration-matched US Treasury securities

Sample responses for "Risk adjustment associated with liabilities"

- Use the cost of capital approach
- PV of return on capital expected by investors
- Use 75th percentile of reserve range
- Gross up reserve by 20%
- Use tail value at risk (T-VaR)

EXAMINER'S REPORT

Candidates were expected to demonstrate an understanding of fair value insurance liabilities under US GAAP

SAMPLE ANSWERS AND EXAMINER'S REPORT

Part a
Candidates were expected to describe the components required to estimate the fair value of insurance liabilities. A common mistake was omitting one or more of the three components in their entirety.
Part b
Candidates were expected to describe how to estimate each of the components underlying the estimate of fair value insurance liabilities. A common mistake was omitting one or more of the three components in their entirety, or stating the components without explaining how each should be estimated.

SPRING 2019 EXAM 6US, QUESTION 17	
TOTAL POINT VALUE: 2.5	**LEARNING OBJECTIVE: C3**
SAMPLE ANSWERS	

Sample responses for part (i)

- SAP: does not allow discounting except for special lines like workers compensation
- SAP: loss reserves generally cannot be discounted. Those lines that can, like workers compensation, use tabular discounts.
- SAP: does not allow discounting loss reserves
- GAAP: discounting of loss reserves is common
- GAAP: allows a more lax approach as long as the discount rate is reasonable and appropriate to the circumstances of settlement of claims
- GAAP: discount reserve
- SAP doesn't discount, GAAP does

Sample responses for part (ii)

- SAP: Directly net out from direct and assumed reserves in liabilities
- SAP: Can state net of reinsurance
- SAP: Loss reserves shown net of ceded loss
- GAAP: creates an asset to account for prospective reinsurance reserves
- GAAP: shows loss reserves gross of reinsurance and creates a reinsurance recoverable asset for ceded amounts
- GAAP: reserves are gross of reinsurance

Sample responses for part (iii)

- SAP: retro recoverables are recorded as a negative write in liability. Loss reserves are gross of all retro reinsurance.
- SAP: create a contra-liability for the reserves ceded. The surplus gain is added to other income, special surplus
- SAP: a negative write in liability
- GAAP: liability is gross of reinsurance reserves, ceded retro reinsurance reserves are recoverable in assets