24. (1.5 points)

For each of the following insurers, briefly describe why the classical technique is not optimal and briefly discuss an alternative technique that addresses the problem identified.

- There is no inflation.

a. (0.5 point)

An auto insurer expanding its operations by writing policies in two new states.

b. (0.5 point)

A homeowners insurer located in a hurricane prone area.

c. (0.5 point)

An insurer writing a long-tail line of business.

| **QUESTION 24** | |
|---|---|
| **TOTAL POINT VALUE: 1.5** | **LEARNING OBJECTIVE(S): B7** |

**NOTE FROM THE SYLLABUS AND EXAMINATION COMMITTEE**

The question as printed in the exam was intended to be answered using alternate techniques to estimate ULAE. It was subsequently acknowledged that some candidates interpreted "classical technique" to be the loss development method, and provided responses containing alternate techniques to estimate unpaid losses. Due to the ambiguity, full credit was given for correct responses under either scenario.

**SAMPLE ANSWERS**

**Part a:** 0.5 point

*Sample 1:*

As the Insurer is expanding his business, his book of business will grow and it will create an immediate increase in ULAE. However, payment will be made at much later maturity. So a paid-to-paid ratio would be distorted. The Kittel approach corrects this distortion by using an average of paid and incurred loss as reserves will also increase right away like ULAE, and would create more stable ratio.

*Sample 2:*

*(Assuming "classical method" meant loss development)*

A different external environment may affect the loss differently (*e.g.* judicial, regulatory, economic, *etc.*). Also, there won't be enough data for the new business. I would use expected claim technique and borrow expected loss ratio from other states while adjusting for external factors if possible.

**Part b:** 0.5 point

*Sample 1:*

As payment in one calendar year may be artificially increased by a catastrophic event while ULAE will not follow the same increase, it could distort paid to paid ratio. It would create low paid ULAE to paid claim for year with catastrophe and high ratio for year without catastrophe. The Mango-Allen approach would use the expected claim paid and would correct for unstable data.

*Sample 2:*

Catastrophe like hurricane will result in volatile frequency and severity. Classical approach assumes that ULAE is proportional to claims in timing and amount, which doesn't hold here. Use count-based technique instead of dollar-based technique such as Brian tech.

*Sample 3:*

*(Assuming "classical method" meant loss development)*

The book of business is subject to large or catastrophe loss. I would separate large loss above certain threshold to conduct separate reserve analysis and use loss ratio based projection.

**Part c:** 0.5 point

*Sample 1:*

For long-tailed lines, there are more ULAE spent on closing the claim than opening as these claims will stay open for a long time and usually require several payments (maintenance). The 50/50 assumption does not hold. However, the generalized Kittel approach works well in this

situation as it has the flexibility to select ULAE proportional to opening, maintaining, and closing claims.

*Sample 2:*
Long-Tail LOB can have ULAE patterns that change over the life of the claim. The ULAE practice of Classical technique is not complex enough for these types of claims. Majority of development incurred maintaining claim. Alternative is to use Brian ULAE technique which analyzes claims by ULAE spent opening, maintaining, paying, closing, and reopening a claim.

*Sample 3:*
*(Assuming "classical method" meant loss development)*
LDF method is not appropriate for immature years due to highly leveraged LDF for the long-tail line. Use BF instead.

*Sample 4:*
*(Assuming "classical method" meant loss development)*
Class tech not optimal because claim costs pattern could be changing over extended period of time. Use Freq-Sev to break out frequency and severity separately.

**EXAMINER'S REPORT**

Candidates were expected to demonstrate knowledge of weaknesses in the classical method of ULAE analysis and recommend an alternative technique that accounts for the deficiency in the classical technique in each of three given situations common to an insurer's operations.

As noted above, responses that provided appropriate alternatives to the loss development technique were also given credit.

**Part a**

Candidates were expected to diagnose why the classical method of ULAE analysis may provide a poor result when applied to a company writing business in two new states, then provide an alternative method of analysis that corrects for the deficiency in the classical method. Credit was given for candidates who assumed the "classical method" referred to the loss development method.

Common errors included:

- Providing an alternative method without a supporting explanation as to why the alternative was appropriate.
- Suggesting Mango-Allen as an alternate technique, as the issue with a growing book of business is not instability in the paid amounts, but rather the assumption that paid and reported amounts are equivalent.

**Part b**

Candidates were expected to diagnose why the classical method of ULAE analysis may provide a poor result when applied to a company writing business in a catastrophe-prone area, then provide an alternative method of analysis that corrects for the deficiency in the classical method. Credit was given for candidates who assumed the "classical method" referred to the loss development method.

For candidates that answered with an alternate ULAE method, responses that involved separating catastrophe from non-catastrophe ULAE did not receive credit for an alternate approach. ULAE from different types of claims is generally difficult to separate, requiring some significant assumptions. This approach was accepted for candidates who assumed the question referred to the loss development method, as catastrophe and non-catastrophe claim payments can be separated much more readily than ULAE payments.

For candidates that assumed the question related to the loss development method, responses involving catastrophe modeling or average catastrophe loads did not receive credit for an alternative approach, as a company would not reserve for an "average" catastrophe in years when a catastrophe did not occur.

Common errors included:

- Selecting alternate methods that did not appropriately account for the volatility in the underlying loss payments. The Kittel Refinement and the Generalized approach both rely on ratios of paid ULAE to paid claims that are volatile in a catastrophe-prone area.

**Part c**

Candidates were expected to diagnose why the classical method of ULAE analysis may provide a poor result when applied to a company writing a long-tailed line of business, then provide an alternative method of analysis that corrects for the deficiency in the classical method. Credit was given for candidates who assumed the "classical method" referred to the loss development method.

A common mistake was attributing the deficiencies of the ULAE classical method to difficulties in establishing the IBNR for the losses themselves.