1. **Learning Objectives:**

3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

**Learning Outcomes:**

(3a) Describe, interpret and apply the applicable Standards of Practice.

(3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.

**Sources:**

NAIC Statement of Statutory Accounting Principles,
- No. 36, “Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves”
- No. 43, “Property/Casualty Unpaid Claim Estimates”

AAA, Committee on Property and Liability Financial Reporting, “A Public Policy Practice Note, Statements of Actuarial Opinion on Property and Casualty Loss Reserves”

- Chapter 14 (Overview of the General Insurance Statement of Actuarial Opinion)

**Commentary on Question:**

This item tests a candidate’s understanding of reserve ranges.

**Solution:**

(a) Compare this concept of a “range of reasonable estimates” to a “range of possible outcomes.”

**Commentary on Question:**

There are several points of comparison that could be made. A full credit response was expected to describe each range and identify a key difference between them. The model solution is an example of full credit solution.

A range of reasonableness refers to a range of actuarial central estimates which can be derived using alternative assumptions and methods that are reasonable.
1. **Continued**

A range of possible outcomes includes values that are unlikely but possible. This type of range is typically produced using a statistical distribution of possible outcomes and then basing the range upon a selected percentile level.

A range of reasonable estimates is typically much narrower than a range of possible outcomes. It is a range that the actuary considers all amounts within it to be appropriate for the carried reserve.

(b) Outline three approaches to selecting a range of reasonable estimates for an SAO.

**Commentary on Question:**
*There are more than three approaches. The model solution is an example of full credit solution. Other reasonable approaches were acceptable.*

- Applying multiple independent reserving methods and forming the range from the central estimates.
- Using alternative sets of reasonable assumptions within a reserving method.
- Examining the reasonable variability of tail factors from development methods.
2. **Learning Objectives:**
   1. The candidate will understand the elements of financial reporting for general insurance companies.

**Learning Outcomes:**
(1e) Understand and apply the concepts of reinsurance accounting.

**Sources:**
- NAIC Statement of Statutory Accounting Principles
  - No. 62, “Property and Casualty Reinsurance”
  - Chapter 4 (Accounting for Reinsurance Contracts)

**Commentary on Question:**
*This item tests a candidate’s understanding of how reinsurance can be used to provide surplus relief under U.S. statutory accounting.*

**Solution:**
(a) Identify the following regarding the surplus strain from prepaid expenses:
   (i) Type of reinsurance used to offset this surplus strain
   (ii) Source of the surplus relief from the reinsurance identified in (i)

   (i) Proportional
   (ii) Reinsurance commissions

(b) Identify how a reinsurance treaty should be structured to maximize surplus relief regarding:
   (i) The attachment basis (losses-occurring or policies-attaching)
   (ii) The effective date

   (i) Losses-occurring
   (ii) Effective December 31.
2. Continued

(c) Explain the pre-1992 rationale for recognizing retroactive reinsurance in:

(i) The state of New York

(ii) The other states

The state of New York did not recognize the gains from retroactive reinsurance until the claims settled. In the other states, if the retroactive reinsurance transferred risk, the insurer received surplus relief.

(d) Describe how retroactive reinsurance is currently recognized under U.S. statutory accounting for the following annual statement items:

(i) Surplus

(ii) Loss reserves

(i) Accounting recognizes the gain from retroactive reinsurance but discloses the effects separately in the insurer’s surplus as special surplus.

(ii) Retroactive reinsurance does not affect the loss reserves.
3. **Learning Objectives:**

4. The candidate will be able to describe the current and historical regulatory environment.

**Learning Outcomes:**

3. Discuss the issues regarding usage based insurance and telematics in automobile insurance.

**Sources:**

Cappelletti, A., “Usage Based Insurance and Telematics,” Society of Actuaries Study Note

**Commentary on Question:**

*This item tests a candidate’s understanding of usage-based insurance and telematics.*

**Solution:**

(a) Explain how pricing factors under usage-based insurance differ from those of traditional coverages for automobile insurance.

**Commentary on Question:**

*There are various ways that one can correctly respond to this item. The model solution is an example of a full credit solution.*

Pricing factors under usage-based insurance (UBI) are based on the usage of the vehicle being insured. These include factors such as distance travelled, speeding, hard braking and aggressive cornering. These factors are in control of policyholder and directly relate to loss exposure.

Traditional pricing factors are not typically in control of the policyholder and are generally only correlated to loss exposure. These include factors such as gender and marital status of driver. While traditional factors also include annual distance traveled, it is not as precise as it is under UBI because it is based upon the policyholder’s estimate at policy inception of a broad category of distance (e.g., under or over 10,000 miles). The traditional rating factor of driving record is not UBI because it looks at past experience and not exposure during the policy period.

(b) Identify two types of telematics devices used by automobile insurers.

**Commentary on Question:**

*There are three main types. Only two were required for full credit. The model solution is an example of a full credit solution. For completeness, the third device is one that is plugged into the vehicle’s ODB port by the policyholder.*

- Professionally installed device
- Smartphone app
3. Continued

(c) Compare the telematics devices identified in part (b) from the perspective of:

(i) Cost

(ii) Tamper-proofing

(iii) Reliability of data captured

Commentary on Question:
The response to this part was dependent on the response to part (b). The model solution for this part is an example of a full credit solution based upon the model solution for part (b).

A professionally installed device is relatively expensive, but it is not generally susceptible to tampering. The data captured from it is reliable.

A smartphone app is a lower cost telematics device. However, it is susceptible to tampering by the user. It is not very reliable, even without tampering, as the user may unintentionally not have their app (or phone) on while driving or it may be on while they are a passenger in another vehicle.

(d) Provide two uses of telematics devices in automobiles other than for the pricing of automobile insurance.

Commentary on Question:
There are several uses of telematics devices other than the pricing automobile insurance. Only two were required for full credit. The model solution is an example of a full credit solution.

- Track stolen vehicle
- Help fight fraudulent claims

(e) Identify three disclosures, as recommended by the ABI, that insurers should provide to consumers.

- How much premium fluctuation they can expect;
- How specific driving behaviors will affect premiums; and
- How telematics will be used in the event of a claim.
4. **Learning Objectives:**
2. The candidate will understand the analysis of a general insurer’s financial health through prescribed formulas, ratios and other solvency regulation methods.

**Learning Outcomes:**
(2b) Understand and apply the elements of the NAIC RBC formula.
(2d) Understand the development and principles of solvency regulation

**Sources:**

- Chapter 12 (Solvency Monitoring)

**Commentary on Question:**
*This item tests a candidate’s knowledge of solvency regulation and the NAIC RBC formula.*

**Solution:**
(a) The U.S. insurance regulatory system can be described as a three-stage process. During the first stage, state lawmakers and regulators eliminate or limit some risks through restriction on activities or by requiring prior approval.

Describe the other two stages.

- Use financial tools and oversight to work with insurers to implement corrective actions in order to avoid failures.
- Provide a back-stop of financial protection if insurer rehabilitation or liquidation is required.

(b) Explain how the NAIC RBC formula addresses correlation and diversification.

**Commentary on Question:**
*There are many ways that the NAIC RBC formula addresses correlation and diversification. A full credit solution was expected to identify at least three of these. The model solution is an example of a full credit solution showing three ways that it is addressed. It is not an exhaustive list of the ways the NAIC formula addresses correlation and diversification.*
4. Continued

- The square root formula assumes that each of the risk categories under the square root sign are independent.
- Half of the reinsurance credit risk charge is conditionally added to the reserving risk charge to account for correlation between these two risks.
- For the calculation of asset risk, diversification is considered by doubling the asset charge for the ten largest holdings.

(c) Describe the statistical safety levels to which the NAIC RBC capital requirements for an individual company are calibrated with respect to:

(i) The total capital requirement

(ii) Capital required for individual risk elements

Commentary on Question:
For part (ii), a full credit response was required to provide at least two examples of risks that have different statistical safety levels. The model solution is an example of a full credit solution.

(i) The total capital requirement has no explicit overall statistical safety level.

(ii) The statistical safety level for the individual risk element required capital differs by risk element. For example, reserving risk and premium risk are both calibrated using the worst year observed in the underlying data, which approximates an 87.5% confidence level while catastrophe risks are calibrated to a 1-in-100-year event.
5. **Learning Objectives:**

5. The candidate will be able to understand tort law and insurance law with respect to its impact on the general insurance industry.

**Learning Outcomes:**

(5a) Describe and interpret the key elements of tort law and the underlying principles of insurance law.

(5b) Discuss the influence of the U.S. tort law environment in other countries.

**Sources:**


**Commentary on Question:**

This item tests a candidate’s knowledge of several tort law topics including the influence of U.S. tort law in other countries, noneconomic damages, the “loser pays” rule and “privity of contract.”

**Solution:**

(a) Provide three reasons why the influence of U.S. tort law has been minimal in Australia and New Zealand.

**Commentary on Question:**

There are more than three reasons. Only three were required for full credit. The model solution is an example of a full credit solution.

- They rely more on English law due to historical ties.
- They have more of a social safety net than the U.S.
- They tend to focus on the collective good. The U.S. tends to focus more on individual rights than the collective good.

(b) Describe the approach taken in Canada regarding awards for noneconomic damages following the SCC ruling on the trilogy of cases.

**Commentary on Question:**

A full credit solution was expected to note the implementation of the cap and provide an additional fact on its application. The model solution is an example of a full credit solution.

The Supreme Court of Canada established a cap of $100,000 in 1978. It has been indexed by inflation since that time.

The cap does not apply in cases of defamation or sexual assault.
5. Continued

(c) Describe two issues with the “loser pays” rule.

Commentary on Question:
There are several issues with this rule. Only two were required for full credit. The model solution is an example of a full credit solution.

- It is difficult to collect legal expenses from a losing party that has limited financial resources.
- It is difficult to apply if there are multiple claims in a case and the plaintiff only wins some of the claims.

(d) Explain how U.S. product liability law has developed with respect to this concept.

Commentary on Question:
It is important to note that this item asks for the development of U.S. product law with respect to privity. As such, a full credit response was required to outline the historical development. The model solution is an example of a full credit solution.

Historically, privity of contract was applied by the courts which required the plaintiff to have a contractual relationship with the manufacturer of the product. However, most consumers purchased products from retailers and not the manufacturers. Privity of contract protected manufacturers from being sued by consumers for manufacturing defective products. In 1916, the case of Macpherson v Buick eliminated the privity of contract requirement in the U.S. Consumers may now sue manufacturers in the U.S. for damages from defective products.
6. Learning Objectives:
1. The candidate will understand the elements of financial reporting for general insurance companies.

Learning Outcomes:
(1a) Understand and apply the concepts of insurance accounting.

(1b) Understand and compare different financial reporting standards for general insurers.

Sources:
• Chapter 1 (Accounting Systems for General Insurers)
• Chapter 2 (Accounting for Insurance Contracts)
• Chapter 3 (Accounting for Financial Instruments)


Commentary on Question:
This item tests a candidate’s knowledge of the differences between U.S. GAAP and U.S. statutory accounting.

Solution:
(a) Compare U.S. statutory accounting and U.S. GAAP accounting with respect to the following:

(i) Primary user

(ii) Focus of accounting rules

Commentary on Question:
The model solution is an example of a full credit solution. For part (i), the model solution shows the primary user for GAAP as investors. It was also acceptable to state the SEC or company management as primary users of GAAP. For part (ii), other descriptions were acceptable. For example, statutory accounting focus could be stated as “a conservative liquidation basis.”

(i) For statutory accounting, it is the state regulator. For GAAP, it is investors.

(ii) For statutory accounty accounting, it is solvency on the balance sheet sheet. For GAAP, it is profitability on the income statement.
6. Continued

(b) Provide one example of a difference between U.S. statutory accounting and U.S. GAAP accounting for each of the following:

(i) Assets

(ii) Expenses

(iii) Reinsurance recoveries

Commentary on Question:
There are many examples that could be provided for each. Only one was required for each. The model solution is an example of a full credit solution.

(i) GAAP recognizes goodwill, statutory accounting does not.

(ii) GAAP creates a deferred acquisition cost asset for the deferral of recognizing acquisition expenses. Statutory accounting recognizes these expenses immediately.

(iii) Management’s estimate of bad debt from reinsurance recoveries flows through the income statement under GAAP. Statutory accounting uses a formula (from Schedule F) to account for bad debt from reinsurance recoveries.
7. Learning Objectives:
4. The candidate will be able to describe the current and historical regulatory environment.

Learning Outcomes:
(4e) Describe the development of general insurance programs controlled by government or collective insurance industry organizations and their mechanisms of operation.

Sources:

Commentary on Question:
*This item tests a candidate’s understanding of government involvement in the provision of general insurance.*

Solution:
(a) Describe four key reasons that would motivate a government to provide general insurance.

**Commentary on Question:**
*Note that this item asks for a description. Simply identifying the four key reasons without a description was insufficient for full credit. The model solution is an example of a full credit solution.*

- A government can take the role of providing insurance for risks that are deemed uninsurable in the competitive market. This may be for “high-risk” insureds that are not written in a competitive market or for all risks in a line of insurance not served by the competitive private insurance market.
- When insurance is compulsory, there must be insurance available to all who require it. Government provision of compulsory insurance can include cross subsidies so that insurance is available and affordable to all who require it.
- Government insurance can be tied to an annual event such as vehicle registration making it more convenient to insureds.
- A government can set up insurance programs such that they include benefits to society as a whole.

(b) Describe four key evaluations that should be performed periodically to assess the performance of a governmental program that provides general insurance.

**Commentary on Question:**
*There are many different evaluations that should be performed. Only four were required for full credit. The model solution is an example of a full credit solution.*
7. Continued

- Ensure that the government program supplies a needed service or achieve a social goal that cannot be reasonably provided by private insurance.
- Ensure that the program adheres to insurance principles and has not taken on characteristics of a welfare program.
- Ensure that the program is reasonably efficient.
- Ensure that the program has exhibited reasonable market acceptance.

(c) Outline the process used by private insurers to determine how risk transfer is accomplished under the U.S. Standard Reinsurance Agreement (SRA) for the multi-peril crop insurance program.

Commentary on Question:
There are many facts about the SRA that could be used in a description of the process. The model solution is an example of a full credit solution. Candidates were not expected to cite the percentage levels for full credit. They are provided in the model solution for completeness.

Insurance companies allocate individual policies they write into one of the following funds: assigned risk or commercial.

The assigned risk fund is for high risk policies. Companies retain a fixed portion (20%) of the assigned risk policies. The remainder is ceded to the government.

The commercial fund is for the insurance company’s better risks. This fund is expected to be profitable. A company decides upon its retention for this fund (retaining at least 35%). The remainder, if any, is ceded to the government.

Sharing is based upon the loss ratio for the retained business. Generally, the higher the loss ratio of the retained business, the lower the company’s share of the result.
8. Learning Objectives:
5. The candidate will be able to understand tort law and insurance law with respect to its impact on the general insurance industry.

Learning Outcomes:
(5a) Describe and interpret the key elements of tort law and the underlying principles of insurance law.

Sources:

Commentary on Question:
This item tests a candidate's understanding of the characteristics of insurance contracts.

Solution:
(a) State the four elements that insurance contracts, like other contracts, must contain in order to be legally enforceable.

- Agreement
- Capacity to contract
- Consideration
- Legal purpose

(b) Describe three other distinctive characteristics found in insurance policies.

Commentary on Question:
There are more than three characteristics. Only three were required for full credit. Simply identifying the characteristics without a description was insufficient for full credit. The model solution is an example of a full credit response.

- Conditional contract: Whether an insurer has a claim to pay depends on whether a covered loss has occurred.
- Contract of utmost good faith: Both parties to the insurance contract are expected to be honest and forthcoming in their dealings with each other.
- Contract of adhesion: The insurer is in sole control of drafting the contract wording that the insured must adhere to. As such, ambiguities in wording are interpreted by the courts in a manner that favors the insured.

(c) Describe how the “principle of indemnity” applies in insurance contracts.

This is the principle that insurance policies should provide a benefit no greater than the loss suffered by an insured.
8. Continued

(d) Identify a provision usually found in insurance contracts that is meant to reinforce the “principle of indemnity.”

**Commentary on Question:**
*There are several provisions that reinforce this principle. Only one was required for full credit. The model solution is an example of a full credit response.*

The “other insurance” provision prevents an insured from receiving full payment from two or more different insurance policies for the same claim.

(e) Describe one example of such an insurance policy.

**Commentary on Question:**
*There are several types of policies that do not adhere to the “principle of indemnity.” Only one was required for full credit. Note that full credit required a description. The model solution is an example of a full credit response.*

A “valued policy.” That is, a policy in which the insurer pays a stated amount in the event of a specified loss regardless of the actual value of the loss.
9. **Learning Objectives:**
1. The candidate will understand the elements of financial reporting for general insurance companies.

**Learning Outcomes:**
(1c) Describe the elements of the NAIC Annual Statement.

(1d) Complete and interpret selected pages/schedules in the NAIC Annual Statement as included in the resources.

(1e) Understand and apply the concepts of reinsurance accounting.

**Sources:**
- Chapter 7 (Schedule P, Statutory Loss Accounting)

NAIC Annual Statement

**Commentary on Question:**
*This item tests a candidate’s understanding of how different forms of reinsurance are reported in the Schedule P exhibits by line of business.*

**Solution:**
Describe how each of the following types of reinsurance are reported by Schedule P line of business:

(i) Assumed nonproportional reinsurance treaty

(ii) Assumed proportional reinsurance treaty

(iii) Assumed reinsurance treaty with both proportional and nonproportional sections

(iv) Ceded nonproportional reinsurance treaty

(v) Ceded proportional reinsurance treaty
9. Continued

(i) Assumed nonproportional reinsurance treaty

Reported separately from the primary lines of business as nonproportional assumed property, nonproportional assumed liability and nonproportional assumed financial lines dependent on the assumed lines written.

(ii) Assumed proportional reinsurance treaty

Reported as assumed amounts in the exhibits for the primary lines of business they apply to.

(iii) Assumed reinsurance treaty with both proportional and nonproportional sections

The proportional and nonproportional amounts are to be separated. The assumed proportional parts are reported in the exhibits for the primary lines as noted in part (ii) and the assumed nonproportional parts are reported in the assumed reinsurance lines as noted in part (i).

(iv) Ceded nonproportional reinsurance treaty

Reported as ceded amounts in the exhibits for the primary lines of business they apply to.

(v) Ceded proportional reinsurance treaty

Reported as ceded amounts in the exhibits for the primary lines of business they apply to.
10. **Learning Objectives:**
1. The candidate will understand the elements of financial reporting for general insurance companies.

**Learning Outcomes:**
(1c) Describe the elements of the NAIC Annual Statement.

(1d) Complete and interpret selected pages/schedules in the NAIC Annual Statement as included in the resources.

**Sources:**
- Chapter 2 (Accounting for Insurance Contracts)
- Chapter 7 (Schedule P, Statutory Loss Accounting)

NAIC Annual Statement

Case Study, Fall 2019, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

NAIC Statement of Statutory Accounting Principles No. 55, “Unpaid Claims, Loss and Loss Adjustment Expenses”

**Commentary on Question:**
*This item tests a candidate’s understanding of loss adjustment expenses and how they are reported in the NAIC Annual Statement.*

**Solution:**
(a) Indicate whether each of the following LAE items is categorized as DCC or A&O under SSAP No. 55:

(i) Surveillance expenses

(ii) Attorney fees incurred in the determination of coverage, including litigation between the reporting entity and the policyholder

(iii) The cost of engaging experts

(iv) Loss adjustment expenses for participation in voluntary and involuntary market pools if reported by accident year
10. Continued

(i) DCC

(ii) A&O

(iii) DCC

(iv) DCC

(b) Calculate the calendar year (CY) amounts below for R-Dan General Insurance Company (R-Dan):

(i) CY 2017 Paid DCC expenses

(ii) CY 2017 Incurred DCC expenses

(iii) CY 2016 Unpaid A&O expenses

Commentary on Question:
There are several different ways to organize these calculations. The model solution is an example of a full credit solution but does not represent the only way to calculate the amounts. The model solution includes page references for values used in the calculation. This was not required for full credit but if a candidate made an error, page references provided a basis for partial credit. The model solution shows a calculation for part (ii). Note that the amount requested for part (ii) can be obtained directly from the Insurance Expense Exhibit (IEE). Referring to the location in the IEE for this amount was sufficient for full credit on part (ii).

The following abbreviations are used in the model solution: CY = calendar year, AS = Annual Statement, Sch. P = Schedule P, UW&IE = Underwriting and Investment Exhibit, p# = page number, r# = row number, c# = column number

(i) CY 2017 Paid DCC expenses


- CY 2017 Paid Net Loss = 446,500 [UW&IE Part 2 c4r35]

CY 2017 Paid DCC expenses = 463,500 - 446,500 = 17,000
10. Continued

(ii) CY 2017 Incurred DCC expenses
= CY 2017 Incurred Net Loss and DCC – CY 2017 Incurred Net Loss

- CY 2017 Incurred Net Loss = 482,100 [AS p4, r2c1]
- CY 2017 Incurred Net Loss & DCC = 466,300 + 36,200 = 502,500
  [Sch. P Part 2 Summary, r11c10 + r12c11]

CY 2017 Incurred DCC expenses = 502,500 – 482,100 = 20,400

(iii) CY 2016 Unpaid A&O expenses

- CY 2017 Paid A&O = 65,700 [UW&IE Part 3 c1r30] – 17,000 [part (i)] = 48,700
- CY 2017 Unpaid A&O = 14,900 [Sch. P Part 1 Summary c12, r21 – r22]
  o CY 2017 Incurred Net Loss & LAE = 482,100 + 70,700 = 552,800 [AS p4, r2 + r3 of c1]
  o CY 2017 Incurred Net Loss & DCC = 502,500 [see part (ii)]
  o CY 2017 Incurred A&O = 552,800 – 502,500 = 50,300

CY 2016 Unpaid A&O expenses = 48,700 + 14,900 – 50,300 = 13,300
11. Learning Objectives:
1. The candidate will understand the elements of financial reporting for general insurance companies.
2. The candidate will understand the analysis of a general insurer’s financial health through prescribed formulas, ratios and other solvency regulation methods.
3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

Learning Outcomes:
(1c) Describe the elements of the NAIC Annual Statement.
(2c) Calculate and interpret the results of financial health ratios.
(3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.

Sources:
- Chapter 11 (Measuring Insurer Financial Strength)
- Chapter 14 (Overview of the General Insurance Statement of Actuarial Opinion)

NAIC Annual Statement

Case Study, Fall 2019, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

Commentary on Question:
This item integrates topics from financial reporting, insurer financial strength through ratios and responsibilities of the actuary.

Solution:
(a) Calculate R-Dan’s 2018 results for the following:
   (i) IRIS Ratio 11
   (ii) IRIS Ratio 12
11. Continued

(i)
- The projected one-year development for 2018 is given as 34 million
- The policyholders surplus (PHS) for the prior year of the 2018 projection is the 2017 PHS = 209.4 million
- 2018 projected NAIC IRIS Ratio 11 = 34 / 209.4 = 16.2%

(ii)
- The projected two-year development for 2018 is the one-year development for 2017 plus the projected one-year development at 2018 for accident years up to 2016 + 20% of 34 million = 43 million
- The PHS for the second prior year of the 2018 projection is the 2016 PHS = 209.1 million
- 2018 projected NAIC IRIS Ratio 12 = 43 / 209.1 = 20.6%

(b) Assess the results of the ratios calculated in part (a) making reference to:

(i) Usual ranges for the ratios

(ii) Areas for further analysis

(iii) Implications for the 2018 Statement of Actuarial Opinion (SAO) and Actuarial Opinion Summary (AOS)

Commentary on Question:
Widely varying responses for full credit are possible for this assessment. A full credit response was required to address each of parts (i), (ii) and (iii). This part was worth 3 exam points. It required more than just three simple sentences for full credit. The model solution is an example of a full credit solution.

For IRIS Ratios 11 and 12, anything over 20% is exceptional. Ratio 12 is projected to move from being not exceptional in 2017 (at just under 20%) to exceptional in 2018. Ratio 11 in not exceptional for both 2017 and 2018. The 2018 result for Ratio 12 may lead to more regulatory scrutiny depending on the results from other IRIS ratios.

Results should be examined by line of business and accident year to determine the source of the current and projected development.
11. Continued

If IRIS Ratio 12 is continually higher than IRIS Ratio 11, the insurer may be intentionally setting deficient reserves. For 2016, 2017 and 2018, IRIS Ratio 12 is greater than IRIS ratio 11. The current and projected results of IRIS Ratio 13 (estimated current reserve deficiency) should be examined to see if there is evidence of reserve deficiency.

The Relevant Comments section of the SAO is required to include a paragraph for factors that lead to any exceptional IRIS ratio values for reserve development/deficiency (IRIS Ratios 11, 12 and 13). If the projected results do occur, R-Dan’s appointed actuary will need to include a paragraph on this since the company will have an exceptional value for IRIS Ratio 12.

(c) Explain the overlap of results from IRIS Ratio 11 and IRIS Ratio 8 (Change in Adjusted Policyholders’ Surplus).

Commentary on Question:
Note that this item asks for the overlap in results, not the use of a common input value in calculation of the ratio.

IRIS Ratio 11 represents underwriting results from prior years’ development. IRIS Ratio 8 is surplus change from operations (both underwriting and investment results).

As such, IRIS Ratio 8 is IRIS Ratio 11 plus profit from the current year’s results, all divided by PHS, which shows the overlap.
12. **Learning Objectives:**
1. The candidate will understand the elements of financial reporting for general insurance companies.

3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

**Learning Outcomes:**
(1a) Understand and apply the concepts of insurance accounting.

(3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.

**Sources:**
  - Chapter 11 (Measuring Insurer Financial Strength)
  - Chapter 14 (Overview of the General Insurance Statement of Actuarial Opinion)
- NAIC Annual Statement
- Case Study, Fall 2019, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.
- Actuarial Standards Board, Actuarial Standard of Practice
  - No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves
- NAIC Statement of Statutory Accounting Principles No. 53, “Property Casualty Contracts-Premiums”

**Commentary on Question:**
*This item tests a candidate’s knowledge of the premium deficiency reserve (PDR). Note that the PDR does not directly involve the amount for loss and LAE reserves. It is for anticipated costs on existing policies, that have not yet been earned, in excess of the unearned premiums.*

**Solution:**
(a) Describe the purpose of a PDR.

The purpose of the PDR is to recognize in financial statements the scenario when anticipated losses, LAE, acquisition costs and maintenance costs on existing policies exceed the recorded unearned premiums.
12. Continued

(b) Assess the reasonability of Sue Calvin’s recommendation for a PDR evaluation.

Commentary on Question:
Widely varying full credit responses are possible. One may side for or against Sue’s recommendation for full credit. The model solution is an example of a full credit solution that sides with Sue’s recommendation.

I agree with Susan’s recommendation for the following reasons:
• The 2017 combined ratio was 112% and investment income was not enough to offset the underwriting loss.
• The 2017 underwriting loss was driven by aggressive pricing, rather than an unusual large loss or catastrophe. As such, the remaining UPR is likely to be deficient as well.
• The planned capital infusion for 2018, in addition to the 2017 infusion, indicates an ongoing problem with current pricing.
• R-Dan’s strategy has been to sacrifice profitability for growth which supports the indication that the premium is likely deficient.

(c) Describe one place in the Statement of Actuarial Opinion where Sue could comment on a PDR.

Commentary on Question:
There are a couple of places where this could be commented on in the Statement of Actuarial Opinion. Only one was required for full credit. The model solution is an example of a full credit solution. The model solution includes the line number in Exhibit B Disclosures. This was not required for full credit but is included for completeness.

Exhibit B Disclosures (Line 13)

(d) Describe how a PDR would be recorded in the balance sheet of the statutory annual statement.

Write-in liability on the liabilities side of the balance sheet.
13. **Learning Objectives:**
   1. The candidate will understand the elements of financial reporting for general insurance companies.

**Learning Outcomes:**
(1a) Understand and apply the concepts of insurance accounting.
(1c) Describe the elements of the NAIC Annual Statement.
(1d) Complete and interpret selected pages/schedules in the NAIC Annual Statement as included in the resources.

**Sources:**
- Chapter 2 (Accounting for Insurance Contracts)
- Chapter 7 (Schedule P, Statutory Loss Accounting)

NAIC Annual Statement

Case Study, Fall 2019, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

**Commentary on Question:**
*This item tests a candidate’s understanding of Schedule P development exhibits and the prior years’ row included in it.*

**Solution:**
Construct the following Schedule P exhibits for R-Dan’s 2018 Annual Statement using the corrected historical amounts and the 2018 data provided. (Columns containing only entries of XXX need not be shown.)

(i) Part 3J

(ii) Part 2J

**Commentary on Question:**
*Full credit was earned by producing the correct numbers in the tables requested for parts (i) and (ii). Showing how the numbers were computed was not required but was necessary to earn partial credit if the numbers were incorrect. The model solution is an example of a full credit solution. It shows the derivation of the numbers required for parts (i) and (ii). The approach used in part (ii) is not the only possible approach. In the model solution, AY = accident year = year in which losses were incurred and YE = year-end (for calendar year).*
13. Continued

(i) For AY 2018, we get net losses and DCC expenses paid at year-end 2018 directly from the 2018 data for paid = 150,000.

For AY 2017, we get net losses and DCC expenses paid at:

- YE 2017 from the 2017 Sched P Part 3J (col 10, row 3) = 128,900
- YE 2018 from the 2017 Sched P Part 3J (col 10, row 3) plus the calendar year 2018 data paid = 128,900 + 5,100 = 134,000

For prior AYs, we get net losses and DCC expenses paid at:

- YE 2016 set to “000” by schedule design
- YE 2017 from the 2017 Sched P Part 3J (col 10 – col 9 for rows 1 & 2) = (1,000 – 1,600) + (112,100 – 111,500) = 0
- YE 2018 from the YE 2017 amount above plus the amounts for AY 2016 and AY 2015 and prior in the 2018 data for paid = 0 + 400 + 200 = 600

(ii) Step 1: Create a 2017 table of total loss and DCC expenses unpaid by subtracting the corrected Part 3J (Cumulative Paid) from the Part 2J (Incurred)

Step 2: Create a 2018 table of total loss and DCC expenses unpaid

14. Learning Objectives:
4. The candidate will be able to describe the current and historical regulatory environment.

Learning Outcomes:
(4b) Describe and interpret the current state of general insurance regulation in the U.S. and its development.

Sources:
Insurance Regulation, The Institutes
• Chapter 2 (Development of Insurance Regulation)

Commentary on Question:
This item tests a candidate’s knowledge of key developments in the U.S. regarding the regulation of insurance and state versus federal regulatory powers.

Solution:
(a) Describe the case of Paul v. Virginia in 1869 with respect to its effect on U.S. insurance regulation.

Commentary on Question:
There are various aspects of this case that could be used to describe it. A full credit response was required to include the key fact that the Supreme Court affirmed that states were responsible for regulation of insurance in its ruling on this case. The model solution is an example of a full credit solution.

Paul applied to become a licensed insurance agent in Virginia to represent foreign insurers. Virginia denied his application. Paul proceeded to sell the policies and was then arrested and convicted. He appealed his conviction.

The Supreme Court affirmed the lower court's ruling, holding that insurance is not interstate commerce. States were responsible for regulation of insurance.

(b) Explain how the ruling in Paul v. Virginia was used by the SEUA in response to these charges.

Commentary on Question:
The key to this item was that a full credit response was required to note how the SEUA used Paul v. Virginia to support the position that insurance is not subject to federal laws. The model solution is an example of a full credit solution.

The SEUA contended only that it was not subject to the Sherman Act because of the ruling in Paul v. Virginia that insurance is not interstate commerce and not subject to Congressional regulation under the Commerce Clause. The state court dismissed the case based on this position.
14. Continued

(c) State the SCOTUS decision on the SEUA case.

**Commentary on Question:**
*A full credit solution was not required to list the specific federal antitrust laws as noted in the model solution.*

The Supreme Court accepted the argument that insurance was interstate commerce and subject to federal antitrust laws (Sherman Act, Clayton Antitrust Act, Robison-Patman Act).

(d) Describe the effect of this act on U.S. insurance regulation.

The law exempted insurance from federal antitrust rules if it was covered by state regulation.

(e) Describe two exceptions specified within this act.

1. The Sherman Act applies to insurers’ antitrust activities; that is, the federal government has regulatory power over insurers’ use of boycott, coercion, or intimidation.
2. Any federal law that applies exclusively to the insurance industry, as opposed to business in general, supersedes any state regulation in the areas addressed by the federal legislation.
15. Learning Objectives:
3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

Learning Outcomes:
(3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.

Sources:
• Chapter 14 (Overview of the General Insurance Statement of Actuarial Opinion)

AAA, Committee on Property and Liability Financial Reporting, “A Public Policy Practice Note, Statements of Actuarial Opinion on Property and Casualty Loss Reserves”

Actuarial Standards Board, Actuarial Standard of Practice
• No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves

Commentary on Question:
This item tests a candidate’s understanding of the SAO when there is a different opinion for gross and net reserves.

Solution:
(a) Draft part C of the year-end 2018 SAO for EPIC.

Commentary on Question:
A full credit solution was required to use appropriate part C opinion language for both the gross and net reserves and to indicate the amounts excessive/inadequate.

Make an inadequate provision for the gross unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements. The provision for gross unpaid loss and loss adjustment expenses is $1 million less than the minimum amount I consider necessary to be within the range of reasonable estimates

Make an excessive provision for the net unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements. The provision for net unpaid loss and loss adjustment expenses is $1 million greater than the maximum amount I consider necessary to be within the range of reasonable estimates
15. Continued

(b) State one advantage and one disadvantage of expanding the SAO to include an opinion on ceded loss and loss adjustment expense reserves.

Commentary on Question:
There are many possible reasonable advantages / disadvantages. Only one of each was required for full credit. The model solution is an example of a full credit solution.

ADVANTAGE
• It would provide a more complete level of actuarial analysis for the opinion.

DISADVANTAGE
• It could overly complicate the work of the Appointed Actuary who would then be required to have a much higher level of knowledge of the reinsurance.
16. **Learning Objectives:**

1. The candidate will understand the elements of financial reporting for general insurance companies.

**Learning Outcomes:**

(1e) Understand and apply the concepts of reinsurance accounting.

**Sources:**

Brehm, P. and Ruhm, D., “Risk Transfer Testing of Reinsurance Contracts”


- Chapter 4 (Accounting for Reinsurance Contracts)

NAIC Statement of Statutory Accounting Principles

- No. 62 Revised, “Property and Casualty Reinsurance”

**Commentary on Question:**

This item tests a candidate’s understanding of deposit accounting for reinsurance.

**Solution:**

(a) Describe the relationship between ERD and the risk measure of tail value-at-risk (TVaR).

**Commentary on Question:**

A full credit solution was required to show that the formula for ERD includes TVaR within it. The model solution is an example of a full credit solution.

The ERD is defined as follows: ERD = pT=P, where p = probability of net income loss, T = average severity of net economic loss, when it occurs, and P = expected premium. The variable “T” in the ERD formula is the TVaR of the total return distribution at the percentile where breakeven occurs (i.e., 1−p).

(b) Compare the two methods of deposit accounting under U.S. GAAP with respect to the following attributes:

(i) Discount rate

(ii) Amortization

(iii) Rules for selecting the method to use
16. **Continued**

(i) **Discount rate:**
The interest method uses the internal rate of return (IRR) of the cash transactions between the reinsurer and the primary insurer. The present value method uses risk-free rates for the maturity of the losses.

(ii) **Amortization:**
The interest method amortizes the deposit from inception to claims settlement. The present-value method amortizes the initial deposit through the end of the contract period and separately amortizes the loss costs from occurrence to settlement.

(iii) **Rules for selecting the method to use:**
If underwriting risk is not significant, whether or not timing risk is also not significant, the interest method is used. If underwriting risk is significant but timing risk is not, the present-value method is used. If both underwriting risk and timing risk are significant but the reinsurance contract does not pose sufficient likelihood of a significant present-value loss to the reinsurer, the present value method is used.

(c) **Estimate the amount of the deposit to be booked by the primary insurer for this reinsurance contract on January 1, 2021 under U.S. GAAP.**

This treaty has timing risk but no underwriting risk; therefore, the interest method is used.

\[ 86,000 = 100,000 \times (1+\text{IRR})^{-4} \Rightarrow \text{IRR} = \left(\frac{100}{86}\right)^{1/4} - 1 \approx .038426 = 3.8426\% \]

At January 1, 2021, the deposit is equal to \( 86,000 \times (1.038426)^2 = 92,736. \)

(d) **Explain how the insurer would account for this change in the deposit for the reinsurance recoverable on January 1, 2021 under U.S. GAAP.**

**Commentary on Question:**
*Note that this item asked for an explanation and not a calculation. The model solution is an example of a full credit solution.*

The change from 100,000 to 140,000 represents a significant change (+40%) in the recoverable. This indicates that the contract did have underwriting risk. Therefore, the interest method would prospectively change to the present-value method. The change in the deposit is recorded as incurred losses.
17. **Learning Objectives:**
2. The candidate will understand the analysis of a general insurer’s financial health through prescribed formulas, ratios and other solvency regulation methods.

**Learning Outcomes:**
(2h) Demonstrate knowledge of ORSA and its implementations.

**Commentary on Question:**
*This item tests a candidate’s knowledge of ORSA reporting.*

**Solution:**
(a) Identify the two primary goals of regulators in requiring an Own Risk and Solvency Assessment (ORSA).

- Foster effective ERM at all insurers to identify, assess, monitor and report on material and relevant risks.
- Provide a group level perspective on risk and capital, supplementing a legal entity view.

(b) Recommend changes to Potter Re’s future ORSAs with respect to the following:

(i) Risks to be modeled

(ii) Modeling methods

(iii) Risk capital metrics

**Commentary on Question:**
*There are several possible reasonable responses for each part that would represent a full credit response. The model solution is an example of a full credit response.*

(i) Risks to be modeled:
In addition to historical modeling of insurance and operational risks, given the move to longer term liabilities, the company should consider including more liquidity, investment, market and credit risks in its model.

(ii) Modeling methods:
The company should consider moving from deterministic testing to more stochastic modeling and assessment. Scenario testing for extreme events should also be considered.
17. **Continued**

(iii) **Risk capital metrics:**
The company should move beyond a security standard that is a percentage of RBC to consider the following metrics from stochastic modeling:
- Value-at-Risk (VAR) to quantify the capital needed to withstand a loss with a defined probability;
- Tail Value-at-Risk (TVAR) to quantify capital needed to withstand average losses above defined probability levels; and
- Probability of ruin.
18. **Learning Objectives:**
   1. The candidate will understand the elements of financial reporting for general insurance companies.

**Learning Outcomes:**
(1a) Understand and apply the concepts of insurance accounting.
(1b) Understand and compare different financial reporting standards for general insurers.
(1c) Describe the elements of the NAIC Annual Statement.

**Sources:**
- Chapter 2 (Accounting for Insurance Contracts)
- Chapter 5 (Accounting Perspectives for Nonadmitted Assets)

**Commentary on Question:**
*This item tests a candidate’s understanding of nonadmitted assets and the difference between U.S. statutory accounting and U.S. GAAP for the reporting of the premium receivable asset.*

**Solution:**
(a) Identify two reasons for the U.S. statutory accounting designation of certain assets as nonadmitted.

**Commentary on Question:**
*There are more than two reasons. Only two were required for full credit. The model solution is an example of a full credit solution.*

- Mitigate investment risk
- Reflect an assets inability to fund claim payments

(b) Provide an example of a nonadmitted asset for each of the reasons identified in part (a).

**Commentary on Question:**
*There are many examples possible. The model solution is an example of a full credit solution based upon the model solution for part (a).*

- Mitigate investment risk – equities above a certain threshold percentage of surplus
- Assets inability to fund claim payments – office furniture
18. Continued

(c) Calculate the following amounts for the BBT policy described above:


(iii) The calendar year 2019 accounting income under U.S. GAAP if BBT expects to collect all of the premium receivable.

(iv) The calendar year 2019 accounting income under U.S. GAAP if BBT expects to collect only 40% of the premium receivable.

(i) On Dec. 31, 2019, the premium receivable is $3,000, of which $2,000 is more than 90 days past due (the July 1 and the October 1 installments) and $1,000 not yet due. So, the overdue installments and all subsequent installments are not admitted. The nonadmitted asset for premium receivable is $3,000.

(ii) Earned premiums are not affected by the admissibility of the premium receivable asset. A change in agent’s balances causes a change in nonadmitted assets, which is a direct charge or credit to surplus, not an income statement item. Statutory income is earned premium less acquisition expenses. The earned premium is $4,000 \times (9/12) = 3,000, so the statutory income is $3,000 \times (1 – 30\%) = 2,100.

(iii) GAAP income is statutory income + change in the deferred acquisition costs (DAC) asset. The DAC increases from zero at Jan. 1, 2019 (before the policy is effective) to $300 at Dec. 31, 2019 (UPR \times 30\% = $4,000 \times (3/12) \times 30\%). Thus, the GAAP income is $2,400 (=2,100 + 300).

(iv) GAAP income from (iii) must be reduced for the bad-debt asset. The bad debt is 60\% of the $2,000 receivable or $1,200. Therefore, the GAAP income is $1,200 (=2,400 – $1,200).
19. Learning Objectives:
5. The candidate will be able to understand tort law and insurance law with respect to its impact on the general insurance industry.

Learning Outcomes:
(5c) Discuss the issues of tort trends and tort reform as it applies to the general insurance industry.

Sources:

Commentary on Question:
This item tests a candidate’s understanding of the cost of torts in the U.S. and their trends.

Solution:
(a) Explain how transnational tort litigation increases tort costs in the U.S. to levels that are higher than those in other countries.

Commentary on Question:
A full credit solution was expected to identify the meaning of transnational torts and why this increases costs in the U.S. The model solution is an example of a full credit solution.

Transnational tort litigation emanates from tort claims against a defendant in one country for actions in another country. Transnational tort litigation increases tort actions in the U.S. from the fact that many companies have U.S. interests. This makes filing a tort in the U.S. possible. Furthermore, U.S. courts are viewed as more generous to plaintiffs than courts in other countries making filing a tort in the U.S. desirable to plaintiffs.

(b) Describe three differences in the legal system that likely contribute to this.

Commentary on Question:
There are more than three differences. Only three were required for full credit. The model solution is an example of a full credit solution.

- Use of trial by jury instead of trial by judge since juries tend to award greater amounts.
- Permitting the use of contingency fees which increases the number of cases.
- Permitting the use of class actions which makes a case with many individually small claims viable.
19. Continued

(c) Explain why there can be major differences in the costs between states even after adjusting for differences in tort exposures and the GDP per capita.

Most torts are handled at the state level and each state sets the rules for its legal system. Some states have instituted tort reforms, such as noneconomic damages reform, that have significantly changed tort costs. Furthermore, over time, some jurisdictions are viewed as having judges and juries that favor plaintiffs over defendants which leads to venue shopping for class actions.

(d) Critique the use of medical care CPI as a proxy for tort cost trends.

Commentary on Question:
There are many acceptable ways to respond to this item and receive full credit. The model solution is an example of a full credit solution.

Tort awards often include compensation for bodily injury. Compensation for bodily injury largely consists of amounts for medical care. As such, trends in medical care CPI should be a reasonable approximation to tort awards for bodily injury. However, it is limited in that it does not measure trends in other costs such as trends in noneconomic damages, property damage and legal expenses.
20. Learning Objectives:

2. The candidate will understand the analysis of a general insurer’s financial health through prescribed formulas, ratios and other solvency regulation methods.

4. The candidate will be able to describe the current and historical regulatory environment.

Learning Outcomes:

(2d) Understand the development and principles of solvency regulation

(4b) Describe and interpret the current state of general insurance regulation in the U.S. and its development.

Sources:

Insurance Regulation, The Institutes
- Chapter 11 (Solvency Regulation)
- Chapter 12 (Insolvency Regulation)

- Chapter 12 (Solvency Monitoring)

Commentary on Question:
This item tests a candidate’s understanding of insolvency regulation and the operation of guaranty funds in the U.S.

Solution:

(a) Identify four other factors that frequently contribute to insurer insolvency.

Commentary on Question:
There are many factors that can contribute to insolvency. Only four were required for full credit. The model solution is an example of a full credit solution.

- Rapid premium growth
- Inadequate rates
- Inadequate reserves
- Uncollectible reinsurance

(b) Describe two reasons why regulators sometimes allow a near-insolvent company to operate without taking any publicly known corrective actions.

Commentary on Question:
There are more than two reasons. Only two were required for full credit. The model solution is an example of a full credit solution.
20. Continued

- Not to preempt the possibility that the insurer’s management will correct the problems that have made the company financially vulnerable.
- A desire to maintain the insurer’s customer and agent loyalty while a solution is sought.

(c) Describe two potential negative consequences of excessive regulatory actions taken to protect consumers.

**Commentary on Question:**
*There are more than two potential negative consequences. Only two were required for full credit. The model solution is an example of a full credit solution.*

- It can cause companies to hold excessive amounts of capital to satisfy the regulator. The cost of excessive capital is born by insurers in the form of reduced profits and by policyholders as they pay higher than necessary premiums to get insurance coverage.
- It can discourage new insurance companies from entering the market and offering insurance products, thereby limiting the choices available.

(d) Describe the following guaranty fund coverage limitations as included in the Model Act:

(i) Deductibles

(ii) Trigger of coverage

(i) Deductibles:
The model act requires a stated deductible per covered claim over any policy deductibles.

(ii) Trigger of coverage:
Fund coverage becomes available for an insurer only after a court has found the insurer to be insolvent and has put it into liquidation.
21. **Learning Objectives:**

1. The candidate will understand the elements of financial reporting for general insurance companies.

3. The candidate will be able to apply the standards of practice regarding the responsibilities of the actuary as defined by regulators and the American Academy of Actuaries.

**Learning Outcomes:**

1a) Understand and apply the concepts of insurance accounting.

1b) Understand and compare different financial reporting standards for general insurers.

1c) Describe the elements of the NAIC Annual Statement.

1d) Complete and interpret selected pages/schedules in the NAIC Annual Statement as included in the resources.

3a) Describe, interpret and apply the applicable Standards of Practice.

3b) Describe, interpret and apply the responsibilities of the actuary with respect to the Statement of Actuarial Opinion and the Actuarial Report.

**Sources:**

- Chapter 2 (Accounting for Insurance Contracts)
- Chapter 7 (Schedule P, Statutory Loss Accounting)
- Chapter 8 (Notes to Financial Statements)
- Chapter 12 (Solvency Monitoring)
- Chapter 14 (The General Insurance Actuarial Opinion)
- Chapter 15 (Federal Income Taxes for General Insurers)

NAIC Annual Statement

NAIC Statement of Statutory Accounting Principles, No. 65, “Property and Casualty Contracts”

Actuarial Standards Board, Actuarial Standard of Practice No. 20, Discounting of Property/Casualty Unpaid Claim Estimates

AAA, Committee on Property and Liability Financial Reporting, “A Public Policy Practice Note, Statements of Actuarial Opinion on Property and Casualty Loss Reserves”
21. Continued

Commentary on Question:
This item tests a candidate’s understanding of several issues associated with the discounting of loss reserves.

Solution:
(a) Describe the types of loss reserves that are permitted to be discounted under U.S. statutory accounting for each of the following:

(i) Tabular discounting

(ii) Non-tabular discounting

Commentary on Question:
There are several ways that the two types of reserves can be described. The model solution is an example of a full credit solution.

Tabular discounting of loss reserves is permitted for fixed and reasonably determinable workers’ compensation indemnity reserves and long-term disability claims.

Non-tabular discounting of loss reserves is permitted for any lines when prescribed by state law.

(b) Identify the required contents of the disclosure in Note 32C.

(1) Amount of discounted current liabilities, excluding the current accident year, at current rate assumptions.

(2) Amount of discounted current liabilities, excluding the current accident year, at previous rate assumptions.

(3) Change in discounted liability due to interest rate assumptions. [(3) = (1) minus (2)]

(c) Describe the two other approaches described in ASOP No. 20.

Commentary on Question:
There are several ways that the two approaches can be described. The model solution is an example of a full credit solution.

• Risk-Free Approach – Approximate risk-free interest rate approximated by rate of investment return available on fixed income assets having low investment risk and timing characteristics comparable to the amounts being discounted.
21. Continued

- Portfolio Approach – The anticipated return from a selected portfolio of assets considering the relationships between the maturities of the assets and the estimated timing of future payments on unpaid claims.

(d) Explain how discounting can be the cause of a reconciling difference between the reserves shown in SAO Exhibit A and the AOS.

Commentary on Question:
The model solution includes the Exhibit A item number and Schedule P Part 1 column numbers. These references were not required for full credit but are included here to understand the source of the reserve numbers for reconciliation.

Exhibit A item 4 is comprised of Schedule P Part 1 amounts (columns 17, 19, and 21) which are gross of nontabular discounting. If the reserves have nontabular discount, then the AOS is net of nontabular discounting creating a reconciling difference.
22. Learning Objectives:
2. The candidate will understand the analysis of a general insurer’s financial health through prescribed formulas, ratios and other solvency regulation methods.

Learning Outcomes:
(2b) Understand and apply the elements of the NAIC RBC formula.
(2g) Compare different solvency standards.
(2i) Discuss the function of credit rating agencies and their impact on general insurers.

Sources:
• Chapter 12 (Solvency Monitoring)
• Chapter 13 (General Insurance Financial Ratings)

Commentary on Question:
This item tests a candidate’s understanding of rating agencies and different capital standards.

Solution:
(a) State one question that a rating agency may ask about an insurer’s growth to assist it in making this assessment.

Commentary on Question:
There are many possible questions that could be asked. Only one was required for full credit. The model solution is an example of a full credit response.

Does growth stem from changes in premium level or changes in underwriting?

(b) Rating agency A.M. Best computes an insurer’s net required capital (NRC) when computing Best’s Capital Adequacy Ratio (BCAR). The BCAR NRC formula is similar to the NAIC RBC formula.

Describe three differences between the two formulas.

Commentary on Question:
There are many differences. Only three were required for full credit. The model solution is an example of a full credit solution.

- BCAR NRC unconditionally places half of the credit charge with reserving risk. The NAIC RBC credit risk adjustment is conditional.
- BCAR NRC includes an interest rate risk charge. NAIC RBC excludes an interest rate risk charge.
22. Continued

- BCAR NRC analyzes the asbestos and environmental reserves liabilities of a company within the reserve risk charge calculation. An adjustment is made for deficiencies. NAIC RBC does not make an adjustment for reserve deficiency of asbestos and environmental claims.

(c) Explain how A.M. Best overcomes this weakness of VaR in its computation of BCAR.

Commentary on Question:
The model solution includes the four probability levels used in BCAR (95%, 99%, 99.5% and 99.6%). These were not required for full credit but are included in the model solution for completeness.

A.M. Best computes four BCAR NRC amounts, using VaR at four different probability levels (95%, 99%, 99.5% and 99.6%). For each BCAR NRC amount, a BCAR is calculated. The BCAR assessment is based on the different BCAR values.