GI FREU Model Solutions
Spring 2018

1. **Learning Objectives:**

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

Learning Outcomes:

(4j) Outline the function and regulation of captives.

Sources:

Cappelletti, A., "Captive Insurance," Society of Actuaries Study Note

Commentary on Question:

This question tests a candidate's understanding of the purpose and operation of captives in addition to the regulation of captives and RRGs.

Solution:

(a) Describe the key characteristics for the following types of captive structure:

(i) Pure Captive

(ii) Group Captive

(iii) Rental Captive

Commentary on Question:

There are a number of key characteristics for each type of captive. For full credit, the characteristics described needed to be distinguishing characteristics for each type and not characteristics common to all three types. The model solution is an example of a full credit solution.

- Pure Captive – A captive that writes only the risks of its parent or affiliates.
- Group Captive - A captive established by a group of companies with similar businesses or exposures writing only the risks of its owners or affiliates.
- Rental Captive – A captive owned by an outside organization and open to participants for a fee. Members rent licenses and capital.

1. Continued

(b) Describe two motives for establishing a captive.

Commentary on Question:
There are a number of valid motives for establishing a captive. Only two were required for full credit. The model solution is an example of a full credit solution.

- Difficulty in obtaining required insurance coverage in the open market.
- Insurance at market rates may not be cost-effective.

(c) Identify four key considerations in selecting a domicile for a captive.

Commentary on Question:
There are a number of key considerations for selecting a captive's domicile. Only four were required for full credit. The model solution is an example of a full credit solution.

- Approval process
- Applicable taxes
- Operation costs and fees
- Permitted lines of business

(d) Compare Risk Retention Group (RRG) captives to non-RRG captives with respect to the following:

(i) Lines of business written

(ii) Business written in non-domiciliary states

Commentary on Question:
The comparison must directly address (i) and (ii) for credit. The model solution is an example of a solution showing the level of detail required for full credit.

(i) RRG captives are limited to commercial liability coverage; non-RRG captives may provide coverage for many different lines of business.

(ii) An RRG captive may write business in any non-domiciliary state; A non-RRG group captive's licence restricts it to writing business in its domiciliary state. To write in any non-domiciliary states, a non-RRG captive would need to get licenced in that state.

2. 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:

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- 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 question tests a candidate's knowledge of SAO requirements and professional responsibilities of the actuary.

Solution:

(a) Describe the RMAD information that you must include in each of the following documents:

(i) Statement of Actuarial Opinion (SAO) Relevant Comments

(ii) SAO Exhibit B

(iii) Actuarial Opinion Summary (AOS)

(iv) Actuarial Report

Commentary on Question:

The model solution is an example of the detail required for full credit.

2. Continued

(i) SAO: Must include a paragraph in the Relevant Comments section specifically on RMAD. The paragraph is to include:
- The amount of adverse deviation that the Appointed Actuary judges to be material with respect to the SAO and an explanation of how that amount was determined;
- A description of the major factors or particular conditions underlying the significant risks; and
- An explicit statement of whether the Appointed Actuary reasonably believes that there are significant risks or uncertainties that could result in material adverse deviation.

(ii) SAO Exhibit B must disclose the amount of materiality and a Yes/No response as to whether or not there is an RMAD.

(iii) AOS: No requirement of RMAD information.

(iv) Actuarial Report: Must include a section in the text for "Extended comments on risks and uncertainties" that should include the determination of why there is an RMAD and detailed commentary on the risks faced by the company which create the RMAD. This commentary should go beyond that included in the SOA relevant comments section.

(b) Describe what the NAIC SAO Instructions state the company must do if you resign on November 30, 2017 and the Board appoints a new Appointed Actuary.

Commentary on Question:
The model solution is an example of a full credit response. Note that some details were included in the model solution for completeness that were not required for full credit. Examples: There was no penalty for excluding "in the 24 months preceding the change" for disagreements. There was no penalty for making a more general statement of timing rather than stating that it must be within "5 days of the action" and "10 days of the notification".

- Within 5 days of the action, the company must advise the relevant domiciliary insurance department in writing of the change.
- Within 10 days of the notification, the company must write a letter to the domiciliary Commissioner. The letter should state whether, in the 24 months preceding the change, there were any disagreements with the former Appointed Actuary regarding the content of the opinion. This letter should include the disagreement on the level of reserves. A copy should be sent the former Appointed Actuary.

(c) Describe what you, as the former Appointed Actuary, are professionally obligated to do after the Board replaces you with a new Appointed Actuary.

2. Continued

Commentary on Question:
There are a number of obligations. The model solution is an example of a full credit response.

You must provide a response to the company's letter. The response, addressed to the company, must state whether you agree with the statements contained in the company's letter and, if not, stating the reasons for disagreement. You must also respond to any enquiries from the new Appointed Actuary.

3. 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.

(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:

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 6 (Schedule F, Statutory Credit for Reinsurance)

Commentary on Question:

This question tests a candidate's understanding of Schedule F and the calculation of the Schedule F provision for reinsurance.

Solution:

(a) Identify four types of reinsurance contracts that might indicate fronting, based upon the percentage ceded, but are exempt from being identified as fronting contracts in Schedule F.

- Affiliated transactions
- Pools
- Small Amounts
- Captives

(b) Explain why each of the four types of reinsurance identified in (a) should be exempt from being identified as fronting contracts.

Commentary on Question:

The model solution is an example of a full credit solution.

- Affiliated transactions: Insurers can use "fleets" of companies for rating purposes. One company may have rates for preferred insureds and another company may have rates for substandard insureds. This is not fronting.
- Pools: Servicing carriers write the involuntary business and cede it to the pool, keeping only an expense allowance for their acquisition and underwriting costs. These are not fronting arrangements.
- Small Amounts: Small reinsurance transactions may result from ceding companies leaving a line of business or a geographic area; these are not fronting arrangements.

3. Continued

- Captives: Whereas an insurer may deduct loss reserves from its taxable income, a non-insurer may deduct only paid losses, not loss reserves. To gain the tax benefits of insurance while avoiding the expense of a commercial policy, a company may form an insurance subsidiary to insure its parent's exposures. This is not fronting.

(c) Calculate Antarctic Pacific's Schedule F total provision for reinsurance with ABC and XYZ.

Commentary on Question:
There are many ways that this calculation can be displayed. The model solution is one example of how it can be displayed.

Both of the reinsurers are unauthorized and not certified. The Schedule F Provision = total recoverables – collateral + 20% of (overdue recoverables + amounts in dispute). This is capped so it does not exceed the total recoverables.

ABC Provision = 1,000 – 100 + 0.2 × (800 + 100) = 1,080 > total recoverables of 1,000. Therefore, it is capped and ABC Provision = 1,000

XYZ Provision = 1,500 – 1,100 + 0.2 × (200 + 200) = 480 < total recoverables of 1,500. There is no capping. XYZ Provision = 480.

The total Schedule F Provision is 1,480.

(d) Describe two other statutory or audited sources of information that can be used to evaluate an insurer's uncollectible reinsurance recoverables.

Commentary on Question:
There are several other sources of information. The key is that they must be from statutory or audited sources. The model solution is an example of a full credit solution.

- Statement of Actuarial Opinion: The appointed actuary's estimate for expected uncollectible recoverables.
- Expected Uncollectable Amount in GAAP Reporting: Management's best estimate for expected uncollectible recoverables.

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:

(2c) Calculate and interpret the results of financial health ratios.

Sources:

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 11 (Measuring Insurer Financial Strength)

Commentary on Question:

This question tests a candidate's understanding of financial health ratios.

Solution:

(a) Describe the purpose of each of the four categories of financial ratios in financial analysis.

Commentary on Question:

There are several ways that each of these broad categories of ratios may be described. The model solution is an example of a full credit solution.

- Activity / Efficiency: Evaluates outputs and revenues generated by the firm's assets.
- Liquidity: Measures the ability of the firm's resources to meet short term obligations.
- Debt / Solvency: Examines the firm's capital structure and its ability to satisfy the debt obligations.
- Profitability: Measures the firm's income relative to liquidity, debt or invested capital.

(b) Provide an example of an NAIC IRIS Ratio for each of the following:

(i) Liquidity

(ii) Profitability

Commentary on Question:

There is more than one NAIC IRIS Ratio for each of categories (i) and (ii). Only one example for each category was required for full credit. The model solution is an example of a full credit solution.

- Liquidity: IRIS 9, Adjusted Liabilities to Liquid Assets
- Profitability: IRIS 5, Two-year overall profitability

5. 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.

(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.

(3c) Compare the Statements of Actuarial Opinion in the U.S. and Canada.

Sources:

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

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

NAIC Statement of Statutory Accounting Principles

- No. 3, "Accounting Changes and Corrections of Errors"
- No. 55, "Unpaid Claims, Loss and Loss Adjustment Expenses"

International Actuarial Association, "International Standard of Actuarial Practice 1, General Actuarial Practice," Approved by the IAA Council November 18, 2012

Commentary on Question:

This question tests a candidate's understanding of NAIC Statements of Statutory Accounting Principles and the responsibilities of the appointed actuary.

Solution:

(a) Explain the meaning of *an unbiased estimate* in this context.

Commentary on Question:

There are several different ways to explain this concept. The model solution is an example of a full credit response.

The estimate is to use the expected (or mean) value without any margins.

(b) Describe how a change in accounting estimate should be reported in statutory financial statements.

5. Continued

Changes in accounting estimates are to be included in the statement of income for the current period (or the period when the change becomes known).

(c) Describe how the correction of an error in previously filed statutory financial statements should be reported in current statutory financial statements.

Correction of an error is to be reported as an adjustment to surplus in the current period (or the period when the change becomes known).

(d) Describe the disclosure required following the correction of a material error in statutory financial statements.

- Description of the change.
- Impact of the change or correction on the two years presented in the balance sheet and income statement.
- Effect on net income of the current period if the change in estimate affects several future periods.

(e) Describe two rules specific to high deductible policies.

Commentary on Question:
There are several rules. Only two were required for full credit. The model solution is an example of a full credit response.

- Reserves for claims shall be established net of the deductible. However, no reserve credit shall be permitted for any claim where any amount due from the insured has been determined to be uncollectible.
- Deductible recoveries that are greater than ninety days old shall be nonadmitted if there is no collateral.

(f) Describe the reporting of ceded retroactive reinsurance in the Annual Statement balance sheet.

Retroactive reinsurance is a write-in contra-liability and not a reserve reduction. It does affect surplus.

(g) Compare the reporting requirements for reserves with respect to risk margins for an actuary signing a U.S. Statement of Actuarial Opinion versus an actuary signing a Canadian Appointed Actuary's Report.

U.S. actuaries opine on undiscounted reserves with no margin while Canadian actuaries opine on discounted reserves with a provision for adverse deviation.

5. Continued

(h) Describe two of the three actions.

Commentary on Question:
Only two of the three actions were required for full credit. The model solution shows all three actions for completeness.

- Decline to perform or continue to perform the actuarial services;
- Work with principal to modify the actuarial services or obtain appropriate addition data; or
- Perform the actuarial services as well as possible and disclose the data deficiencies in the report, subject to compliance with the actuary's code of professional conduct,.

6. Learning Objectives:

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

Learning Outcomes:

(4d) Discuss market conduct regulation.

(4e) 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 question tests a candidate's understanding usage based insurance and telematics for the underwriting and rating of automobile insurance.

Solution:

(a) Describe how the use of telematics can improve upon the historical underwriting and rating approach before the use of telematics from the perspective of insurers.

Commentary on Question:

Widely varying full credit responses were possible for this question. To earn full credit, the response needed to describe an aspect of the historical approach and then describe how telematics improved it from the insurers' perspective. The model solution is an example of a full credit response.

Historical rating and underwriting commonly used a two tier "high"/ "low" mileage system, charging more for "high" mileage. This was based on the drivers estimate of a mileage threshold - not usually verified by the insurer. Amount driven is a direct exposure to loss frequency. Telematics can improve this rating factor by using actual miles driven. This is a more refined measure of exposure. Also, drivers are also in control of miles driven so they can reduce exposure and premium by driving less. Overall, this should improve insurer results.

(b) Describe one pro and one con for each of the following types of telematics devices:

(i) Professionally installed devices
(ii) Smartphone application

Commentary on Question:

There are several pros and cons for each device. Only one pro and one con was required for each device to earn full credit. The model solution is an example of a full credit response.

6. Continued

(i) Professionally installed devices
Pro: Less susceptible to tampering
Con: Most expensive for the insurer with cost of the device and cost of installation.

(ii) Smartphone application
Pro: Least expensive device for the insurer. Insured uses their own phone.
Con: Easiest device to manipulate. Insured controls turning phone or app on/off.

(c) Identify one potential benefit that a telematics program may have for each of the following:

(i) the insured

(ii) the public

Commentary on Question:
There are several benefits for each stakeholder. Only one was required for each to earn full credit. The model solution is an example of a full credit response.

(i) Insured:
Enables the insured to directly control premium by reducing exposure to accidents through safer driving/lower mileage driving.

(ii) Public:
Telematics can encourage safe driving which should reduce serious injuries and damage to public property.

7. 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.

(5e) Describe and interpret legal cases/issues included in the syllabus resources.

Sources:

Cappelletti, A., "Tort Law: Topics for General Insurance Actuaries," Society of Actuaries Study Note

Excerpts from Business Law for Insurance Professionals, Institutes Custom Publishing, Assignment 2 (Tort Law)

Commentary on Question:

This question tests a candidate's understanding of the issues regarding awards for punitive damages.

Solution:

(a) Describe two different types of non-compensatory tort awards.

Commentary on Question:

For full credit, the response was to include a description. Several candidates described "pain and suffering" awards in their response. This was incorrect because they are compensatory awards for non-economic damages.

- Punitive damages – Punishes defendant for intentional or malicious misconduct; deters future acts of misconduct.
- Nominal damages – Plaintiff suffers no actual loss but the court wants to recognize that plaintiff rights have been violated.

(b) Identify four examples of acts by insurers that have led to non-compensatory tort awards against insurers in bad faith litigation.

Commentary on Question:

There are many examples. Only four were required for full credit. The model solution is an example of a full credit response.

Malicious acts;
Arbitrary claims decisions;
Unjust application of policy exclusions;
Unjust delay in the payment of valid claims;

7. Continued

(c) Describe two examples of tort reforms that the regulators could consider.

Commentary on Question:
Widely varying responses are possible. The model solution is an example of a full credit response.

- Capping punitive damages relative to the amount of compensatory damages.
- Requiring a unanimous jury verdict in order to award punitive damages.

(d) Describe four of these considerations other than reprehensibility.

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

- If a case is absent of all the reprehensibility factors, or only one of the five factors is present, that case would not warrant an award for punitive damages.
- A punitive damages award should be based only upon conduct that harmed the plaintiff.
- The ratio of the punitive damages award to the compensatory damages award should be a single digit ratio.
- A large compensatory damages award indicates a punitive damages award not greater than compensatory damages award.

(e) Identify two of the reprehensibility factors from the ruling.

Commentary on Question:
There are five factors. Only two were required for full credit. The model solution is an example of a full credit solution.

1. The harm caused was physical as opposed to economic.
2. The target of the conduct had financial vulnerability.

8. **Learning Objectives:**

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

Learning Outcomes:

(4f) Describe the development of general insurance programs controlled by government or collective insurance industry organizations.

(4g) Describe the mechanisms of operation for government and/or collective insurance industry controlled programs as included in the resources.

Sources:

Cappelletti, A., "Government Provision of General Insurance," Society of Actuaries Study Note

Commentary on Question:

This question tests the candidate's understanding of what constitutes social insurance and the government's role in providing workers compensation coverage.

Solution:

(a) Provide three reasons why WC may be considered social insurance.

Commentary on Question:

There a number of reasons that could be used to consider WC social insurance. Only three were required for full credit. To provide the reasons, one had to relate the reasons as to what constitutes social insurance. This could be done for each reason individually or by simply defining social insurance before providing the three reasons. The model solution is an example of a full credit solution that takes the latter approach.

Social insurance involves the protection of the individual against economic hazards in which the government participates or enforces the participation of employers and affected individuals. WC may be considered social insurance because:

- the program is defined by statute;
- the coverage is compulsory for most; and
- there is a defined level of protection.

8. Continued

(b) Compare the government involvement in the provision of WC between the U.S. and Japan, with respect to the following factors:

(i) Delivery system

(ii) Coverage of workforce

(iii) Funding

(iv) Tort vs. no-fault compensation

Commentary on Question:
The model solution reflects the level of detail required for full credit.

(i) Delivery system
U.S.: Provided by private insurers for the most part. Some state governments provide WC for the residual market. The private market is closely supervised by insurance supervisors.

Japan: Provided directly by the federal government as part of its social insurance system for medical care. Government is responsible for operation of specialized hospitals for workplace accidents.

(ii) Coverage of workforce
Both countries have compulsory coverage for most with a few exceptions.

(iii) Funding
U.S.: Funded by employer paid premiums.
Japan: Funded by a combination of employer paid premiums and government funding.

(iv) Compensation system
Both countries have a no-fault compensation system.

9. 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.

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

(2a) Evaluate the financial health of a general insurer using information contained in the 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:

Case Study, Spring 2018, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

NAIC Annual Statement

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 11 (Measuring Insurer Financial Strength)
- 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"

Commentary on Question:

This question tests a candidate's understanding of the Annual Statement and IRIS Ratios, the ability to calculate IRIS Ratios, and the responsibility of the Appointed Actuary with respect to Schedule P.

9. Continued

Solution:

(a) Determine whether or not R-Dan's Ratio 11 (One-Year Reserve Development Ratio) was exceptional for each of the last three calendar years.

Commentary on Question:
This question involved calculating IRIS Ratio 11 for each of 2017, 2016 and 2015. The one-year reserve development information is taken from Schedule P Part 2 Summary. Note that the ratio uses the prior year-end surplus. That is, the 2017 ratio uses the 2016 year-end surplus, and so on. Surplus for year-end 2016 and 2015 can be found on Annual Statement Page 4. The year-end 2014 surplus can be found on Annual Statement Page 17. Note that there is an inconsistency between Annual Statement Pages 4 and 17 for year-end 2015 surplus. One could have used either value for the response to this question. The model solution is an example of a full credit solution that takes all the surplus amounts from Annual Statement Page 17. The notation in italics as to where the numbers are from in the solution were not required for full credit. They are a guide to the reader of this solution.

Amounts are in thousands.

- 2017 1-year development = 36,200
  [last col Sched P, Part 2 Summary]
- 2016 1-year development = 14,800 [= 38,900 – (36,200 – 12,100)]
  [difference between last two columns excluding accident year 2016)]
- 2015 1-year development = 29,300 [= (600 – 100 +100 – 600 – 900 + 300 + 3,300 + 26,600)]
  [sum of difference between 2015 column and 2014 column excluding accident year 2015]

IRIS Ratio 11 (one-year reserve development / prior year-end surplus)
2017: 36,200 / 209,100 = 17.3%
2016: 14,800 / 172,800 = 8.6%
2015: 29,300 / 153,800 = 19.1%

The ratio is under 20% and therefore not exceptional for each of the past 3 calendars years

(b) Calculate R-Dan's Ratio 5 (Two-Year Operating Ratio) for 2017.

9. Continued

Commentary on Question:
The model solution is an example of a full credit response. The following explains the source for the numbers in the model solution:

- *Loss ratio = [Net losses and LAE incurred (current and prior years) + dividends to policyholders (current and prior years)] / net premiums earned (current and prior years) [from Annual Statement page 4]*
- *Expense ratio = [Other underwriting expenses (current and prior years) + aggregate write-ins for underwriting deductions (current and prior years) – total other income (current and prior years)] / Net WP (current and prior years) [from Annual Statement pages 4 and 17]*
- *Investment ratio = Net investment income earned (current and prior years) / net earned premiums (current and prior years) [from Annual Statement page 4]*

IRIS ratio 5 = Loss ratio + expense ratio – investment income ratio
Loss Ratio
= [(482,100 + 70,700) + (386,300+64,400)] / (578,500 + 511,600) = 92.1%
Expense Ratio
= [(98,200 – 2,700) + (90,600 – 2,400)] / (607,700 + 534,500) = 16.1%
Investment Ratio
= (31,900 + 29,600) / (578,500 + 511,600) = 5.6%

IRIS ratio 5 = 92.1% + 16.1% – 5.6% = 102.5%

(c) Assess the result of R-Dan's Ratio 5 from a regulatory perspective.

Commentary on Question:
The model solution is an example of a full credit response.

- At 102.5%, this would be exceptional because it is greater than 100%. It is a measure of profitability and this suggests that R-Dan is unprofitable.
- However, this may not be a good measure of current profitability if the loss ratio is high due to development on prior accident years.
- As seen from the IRIS ratio 11 results, there has been consistent significant development on prior years', so the regulator may re-calculate this ratio after adjusting out prior development so that it is a better measure of current operations.

(d) Explain why R-Dan's Ratio 5 understates current profitability.

The current calendar year results have been affected by significant development on prior accident years.

9. Continued

(e) Explain why Ratio 5 generally overstates an insurer's profitability.

The operating ratio does not deduct the cost of holding capital.

(f) Explain why Sue Calvin's table does or does not satisfy the Annual Statement instructions for this Schedule P reconciliation.

The Schedule P reconciliation requires a reconciliation of data used in the actuary's analysis with Schedule P data (i.e., source data such as earned premium, paid losses, case reserves). This table doesn't contain data, it includes results.

(g) Explain whether or not one can determine Sue Calvin's estimate of total IBNR by accident year from Schedule P.

Annual Statement exhibits, including Schedule P, only include carried amounts that are not necessarily the actuarial estimates. As per the Actuarial Report, the company does not carry the actuarial estimate. Therefore, this cannot be determined from Schedule P.

10. 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.

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

Sources:

Case Study, Spring 2018, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

NAIC Annual Statement

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 7 (Schedule P, Statutory Loss Accounting)

Commentary on Question:

This question tests a candidate's understanding of the relationship between the unpaid loss amounts on the balance sheet and those inferred from Schedule P Parts 2 and 3.

Solution:

(a) Explain why these two amounts should not reconcile without any adjustments.

Schedule P, Parts 2 and 3 exclude AO expenses while Page 3 includes them. One needs to exclude AO expenses from the Page 3 amounts for a reconciliation.

(b) Provide a reconciliation of the two amounts making any necessary adjustments.

Commentary on Question:

The reconciliation can be done by adjusting either of the two amounts to the other amount. The model solution is an example of a full credit solution that adjusts the balance sheet amount to equal the inferred Schedule P amount.

Following amounts shown in thousands.

Schedule P Parts 2 and 3 infer unpaid loss and DCC by subtracting Schedule P Part 3 (i.e., cumulative paid) from Schedule Part 2 (i.e., cumulative incurred) for the current year (column 10) for all accident years.

Schedule P Part 2 Incurred loss and DCC is
3,394,900
=68,600+231,400+251,300+272,100+304,400+306,300+345,100+369,700+383,700+396,000+466,300

10. Continued

Schedule P Part 3 Paid loss and DCC is
3,120,400
=68,300+231,200+251,200+271,700+303,400+304,300+339,100+355,200+
354,100+335,700+306,200

Therefore, the Schedule P Parts 2 and 3 inferred unpaid loss and DCC is
3,394,900 – 3,120,400
= 274,500

Page 3 unpaid loss and loss adjustment expense (LAE) amounts are from lines 2 and 3: 238,800 + 50,700 = 289,500

Schedule P Part 1 Summary shows unpaid LAE amounts split by DCC and AO. AO unpaid is 14,900 from column 21.

Therefore, Page 3 unpaid loss and LAE excluding AO is 289,500 – 14,900
= 274,600

The amounts are off by 100,000. They may be considered consistent as the amounts in the Annual Statement excerpts in the Case Study have been rounded to the closest 100,000.

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.

Learning Outcomes:

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

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

(2c) Calculate and interpret the results of financial health ratios.

Sources:

Case Study, Spring 2018, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

NAIC Annual Statement

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 4 (Accounting for Reinsurance Contracts)
- Chapter 11 (Measuring Insurer Financial Strength)

Commentary on Question:

This question tests a candidates' understanding of calculating an expected loss ratio using the Annual Statement data, and the effect of proportional reinsurance on statutory surplus / IRIS Ratios,

Solution:

(a) Demonstrate that R-Dan's selection of 75% as the ELR for the proposed reinsurance is reasonable based upon Annual Statement data.

Commentary on Question:

In order to demonstrate this, one must look at accident year loss ratios over several years for the homeowners multiple peril line of business. Examining just the latest accident year was not sufficient for full credit. The loss ratios should include DCC to be consistent with the reinsurance terms. The model solution is an example of a full credit solution that looks at the last five accident years.

A review of the accident year loss ratios for this line can be determined from Schedule P Part 1A (premiums in column 28) and 2A (loss and DCC in column 10). The following table displays results for the last five accident years

11. Continued

Accident Year	Loss & DCC	Net EP	Loss Ratio
2013	60,800	76,100	79.9%
2014	74,500	86,800	85.8%
2015	78,300	103,700	75.5%
2016	93,700	131,900	71.0%
2017	121,900	167,200	72.9%
TOTAL	429,200	565,700	75.9%

The average over the last five accident years is just over 75% and the past two years were under 75%. 75% appears to be a reasonable selection for the ELR.

(b) Determine the cession percentage required from this proposed reinsurance to meet R-Dan management's target with respect to statutory surplus.

Commentary on Question:
There are various approaches that can be taken to determine this. The model solution is an example of a full credit solution. References in italics within the model solution were not required but are included as a guide to the source of the data.

The projected policyholders' surplus (PHS) for 2018 is 229.4 million [*Case Study Section 6, table*]. Therefore, the target is 105% of 229.4 million which is 240.87 million. This is a targeted increase in surplus of 11.47 million.

The treaty applies to homeowner's multiple peril for 2018 on a "policies attaching basis" (i.e., written premiums). An estimate of the net unearned premiums (after current reinsurance) is 50% of the projected net premiums written. Therefore, the 2018 net unearned premiums before the proposed quota share is
50% of 211.7 million [*Case Study Section 6, table*] = 105.85 million.

Surplus relief from proportional reinsurance under statutory accounting is ceding commission times ceded unearned premiums from the reinsurance treaty. Target surplus relief is 11.47 million. Let Y be the cession percentage. Therefore,

$20\% \times Y \times 105.85 = 11.47 \Rightarrow Y = 11.47/ (105.85 \times 0.2) = 54.2\%$

At the preliminary terms, R-Dan would need to cede 54.2% of premiums and losses for homeowners multiple peril under the proposed quota share treaty to have an expectation of meeting the surplus target.

11. Continued

(c) Calculate the expected change in R-Dan's 2018 NAIC IRIS Ratio 2 (Net Premiums Written to Policyholders' Surplus) from the use of this proposed reinsurance and the cession percentage calculated in part (b).

IRIS Ratio 2 = NWP / PHS for 2018

- Without the quota share (QS), the projected 2018 IRIS Ratio 2 = 688.3 / 229.4 = 3.00.
- With the QS, 2018 PHS is 240.87 million [*from part (b)*]. NWP decreases by the cession percentage (54.2%) times the earned portion of the homeowner's multiple peril policies attaching in 2018 (50% × 211.7) which is a decrease of 57.35 million. After QS, IRIS Ratio 2 = (688.3 – 57.35) / 240.87 = 2.62

This is a 13% decrease in the ratio from 3 to 2.62.

(d) Determine whether or not R-Dan's 2018 NAIC IRIS Ratio 4 (Surplus Aid to Surplus) would be exceptional from use of this proposed reinsurance and the cession percentage calculated in part (b).

IRIS Ratio 4 = Surplus aid to PHS

After the proposed QS in 2018:
PHS is 240.87 (*from part (b)*),
Surplus aid = 11.47 (*from part (b)*)

IRIS Ratio 4 = 11.47 / 240.87 = 4.8% < 15% so it is not exceptional.

12. 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.

Sources:

Case Study, Spring 2018, SOA Exam General Insurance, Financial and Regulatory Environment – U.S.

NAIC Annual Statement

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 5 (Accounting Perspectives for Non-Admitted Assets)

Commentary on Question:

This question tests a candidate's understanding of data references in the Annual Statement and the reasons for certain assets being classified as nonadmitted.

Solution:

(a) Identify where in R-Dan's Annual Statement these amounts can be located, other than in the Schedule F exhibits. Include Annual Statement page and row/column in your identification.

Commentary on Question:

The model solution notes that the 1,800,000 unearned adjustment is located on Annual Statement page 3. Note that it is also located in the Notes to Financial Statements Note 23C. This was also an acceptable response to earn full credit for that portion of part (a).

The 1,800,000 unearned adjustment is located on Annual Statement page 3 row 9 in the descriptor column.

The 27,200,000 loss and LAE adjustment is located on Annual Statement page 33, (Schedule P Part 1 Summary) from row 12, sum of columns 14, 16, 18, 20 and 22.

(b) Provide a possible reason as to why these assets were classified as nonadmitted.

Commentary on Question:

The model solution is an example of a full credit response. It was also acceptable to note that "this could be due to an accounting error since common stocks are not above 25% of total assets or 100% of surplus."

12. Continued

The nonadmitted assets are for common stock. Common stock may be classified as nonadmitted if above 25% of total assets or 100% of surplus. However, this is not the case. This could be because the NAIC model investment act also sets limits on the percentage of total assets in any one security or from one issuer.

(c) Provide a possible reason as to why a portion of the net deferred tax asset was classified as nonadmitted.

Commentary on Question:
The model solution is an example of a full credit response.

The net deferred tax asset cannot be used to pay claims if the insurer is financially distressed. The amount of deferred tax assets that are designated as admitted assets in U.S. statutory accounting depends on the financial strength of the insurer. R-Dan's financial strength is likely not sufficient for fully admitting this asset.

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.

(1b) Compare different financial reporting standards for general insurers including: U.S. Statutory Account Principles (SAP), U.S. Generally Accepted Accounting Principles (GAAP), Canadian Generally Accepted Accounting Principles (CGAAP), Solvency II and International Financial Reporting Standards (IFRS)

Sources:

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 2 (Accounting for Insurance Contracts)

Commentary on Question:

This question tests a candidate's understanding of IFRS 4 and its differences to GAAP.

Solution:

(a) Describe the four building blocks of total insurance liability under International Financial Reporting Standards (IFRS) 4.

Commentary on Question:

Note that identifying the four building blocks was not sufficient for full credit. A description of each was required for full credit.

Estimated Value of Future Cash Flows: Estimate of the total value of insurance cash flows: premiums collected, claims paid and expenses paid. Amount is to be an unbiased estimate based on up-to-date information and probability weighted cash flows

Discount: Adjustment of using a market consistent risk-free rate yield curve plus a liquidity premium to take building block 1 to a present value estimate.

Risk Adjustment: An explicit adjustment to reflect the uncertainty in the estimate of future cash flows. This adjustment reflects the diversification benefit for the insurer and the insurer's risk aversion.

Contractual Service Margin: This margin represents the profit of the contract, where profit is measured as the amount that the present value of future cash inflows exceeds the sum of the present value of future cash outflows and the risk adjustment.

13. Continued

(b) Compare the accounting treatments under IFRS 4 and GAAP for the following:

(i) Reporting of premiums

(ii) Use of risk margins

(iii) Recognition of profit

Commentary on Question:
The model solution is an example of a full credit response.

(i) Reporting of premiums
IFRS 4: Reported net of directly attributable expenses at inception.
GAAP: Full amount reported. Income amortized over the contract period.

(ii) Use of risk margins
IFRS 4: Explicit risk margins used.
GAAP: Use of implicit risk margins (e.g. undiscounted loss reserves).

(iii) Recognition of profit
IFRS 4: Shows expected profit, risk adjustment and contract margins at inception of the contract.
GAAP: Recognition of profit is based on premium earnings and loss / expense incurred patterns.

14. 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) Compare different financial reporting standards for general insurers including: U.S. Statutory Account Principles (SAP), U.S. Generally Accepted Accounting Principles (GAAP), Canadian Generally Accepted Accounting Principles (CGAAP), Solvency II and International Financial Reporting Standards (IFRS)

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

(1h) Estimate the premium asset for retrospectively rated polices for financial reporting.

Sources:

Teng, M. and Perkins, M., "Estimating the Premium Asset on Retrospectively Rated Policies"

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 5 (Accounting Perspectives for Non-Admitted Assets)

Commentary on Question:

This question tests a candidate's understanding of the procedure to estimate the premium asset on retrospectively rated policies and the use of nonadmitted assets under U.S. statutory accounting.

Solution:

(a) Explain why the Teng and Perkins method is generally favored over the Berry approach.

Commentary on Question:

The model solution is an example of a full credit solution.

The Barry approach lacks intuitive appeal, particularly as it relates to how a retro rating formula actually works. Retro premium is calculated as a function of loss. The Barry approach does not use loss information. The Teng and Perkins method estimates retrospective premium as a function of reported losses.

(b) Calculate the premium asset on retrospectively rated policies as of December 31, 2017 arising from policy year 2016.

14. Continued

$CPDLD_1$
= weighted sum of PDLDs by expected % of loss emerged from 1st to 3rd adjustment
= (1.65 × 65% + 0.70 × 25% + 0.40 × 10%) / (65% + 25% + 10%)
= 1.2875

Premium Asset
= Estimated Total Premium – Premium Booked
= Expected Future Loss Emergence × $CPDLD_1$ – Premium Booked
= 320 million × 1.2875 – 370 million = 42 million

(c) Calculate the admitted portion of the premium asset from part (b) under the rules of U.S. statutory accounting.

10% of unsecured premium assets (i.e., EBUB & ARP) are not admitted. Therefore 37.8 million (= 90% × 42 million) is the admitted portion of the premium asset.

(d) Explain how the use of nonadmitted assets for receivables may make statutory income greater than GAAP income.

GAAP: Estimated uncollectible receivables reduce income.
U.S. statutory accounting: Nonadmitted assets for receivables do not affect statutory income, they are a direct charge to surplus.

15. 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"

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 4 (Accounting for Reinsurance Contracts)

NAIC Statement of Statutory Accounting Principles

- No. 62 Revised, "Property and Casualty Reinsurance"

Commentary on Question:

This question tests a candidate's understanding of the risk transfer test for reinsurance accounting.

Solution:

(a) Calculate the following for this treaty:

(i) Expected Reinsurer Deficit (ERD)

(ii) Risk Coverage Ratio (RCR) in percent form

Amounts are in thousands.

(i) ERD

P = expected premium = 3,200
p = probability of net loss = 2% + 1.5% + 0.5% = 4%
T = average severity of net loss
= (11,420 × 2% + 40,260 × 1.5% + 68,800 × 0.5%) / 4%
= 29,407.5
ERD = pT/P = 4% × 29,407.5 / 3,200 = 36.8%

(ii) RCR, % form

T = 29,407.5
E[G] = expected economic gain across all possibilities
= 3,200 × 96% – 11,420×2% – 40,260×1.5% – 68,800×0.5% = 1,895.7
RCR = E[G]/(pT)
= 1,895.7 / [4% × 29,407.5] =1.61
RCR, % form = 1 / RCR = 1 / 1.61 = 62.1%

15. Continued

(b) Determine whether or not this treaty should be recognized as containing risk transfer under U.S. statutory accounting.

Commentary on Question:
The model solution is an example of a full credit solution. Alternatively, a candidate could have made reference to the values from part (a) to support the determination.

This treaty contains risk transfer. There is no requirement for testing those contracts where the risk transfer is "reasonably self -evident." Excess of loss contracts without any loss-sensitive features are deemed "reasonably self-evident."

(c) Describe how each of the following contract features affects the determination of risk transfer under U.S. statutory accounting:

(i) Refund clause - Partial refund of reinsurance premiums to the ceding insurer for incurring no losses to the layer.

(ii) Loss payment clause - The reinsurer is to settle and pay all incurred losses in the layer twelve months after the expiration of the treaty.

(iii) Premium payment clause - Half of the premium is paid by the ceding insurer at contract inception while the remainder is held in trust by the ceding insurer in an investment account in which the ceding insurer guarantees a minimum annual investment return of 8%.

Commentary on Question:
The model solution is an example of a full credit solution.

(i) Experience refunds limit the underwriting risk directly and should be evaluated.

(ii) The loss payment clause may delay the timely reimbursement of claims limiting timing risk so it should be evaluated.

(iii) The premium payment clause does not affect either underwriting or timing risk. It may not need to be evaluated.

16. 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) Compare different solvency standards.

(2i) Discuss the function of credit rating agencies and their impact on general insurers.

Sources:

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- Chapter 12 (Solvency Monitoring)
- Chapter 13 (General Insurance Financial Ratings)

Commentary on Question:

This question tests a candidate's understanding of rating agencies for general insurers and the ability to calculate various risk measures used for evaluating solvency.

Solution:

(a) Identify four other key non-public qualitative attributes that should be discussed in an interactive meeting.

Commentary on Question:

There are many key non-public qualitative attributes that should be discussed in an interactive meeting. Only four were required for full credit. The model solution is an example of a full credit solution.

- Management structure
- Underwriting expertise
- Organizational structure
- Capital structure

(b) Provide one question to ask the senior management at SAM for each of the four key qualitative attributes identified in part (a).

Commentary on Question:

There are many question that should be asked for each attribute. Only one for each of the four identified in the response to part (a) was required for full credit. The model solution is an example of a full credit response using the four attributes identified in the model solution for part (a).

16. Continued

- Management structure
  - How long have members of senior management worked in the insurance industry?
- Underwriting expertise
  - Does brand loyalty lead to high renewal?
- Organizational structure
  - Does the insurer have subsidiaries or affiliates?
- Capital structure
  - Is the insurer owned by a holding company that has issued debt?

(c) Assess whether SAM's regulatory interactions are a positive, negative, or neutral factor from a financial rating perspective.

Commentary on Question:
The model solution is an example of a full credit solution.

Negative
Insurance is highly regulated. Relying on trade organizations for lobbying and filings limits interactions. It also does not allow SAM differentiation in the market from its peers.

(d) Assess whether the recent change in SAM's reinsurance program is a positive, negative, or neutral factor from a financial rating perspective.

Commentary on Question:
The model solution is an example of a full credit solution. The model solution noted "neutral" but "negative" would also be acceptable.

Neutral
Increasing attachment points may indicate a reinsurer's concern that risk quality is poor. It may also indicate the primary insurer's belief that less coverage is needed or that the reinsurance is too expensive, so this information must be examined carefully.

(e) Calculate the following for SAM:

(i) Expected policyholder deficit (EPD)

(ii) EPD ratio

(iii) 99% Value at Risk (VaR)

(iv) 99% Tail Value at Risk (TVaR)

16. Continued

Commentary on Question:
The model solution is an example of a full credit solution.

(i) EPD

The policyholder deficit is zero if actual loss payments are less than 600 million because SAM holds 100 million in capital with 500 million in unpaid losses. This represents a 66.7% = (600 – 200) / (800 – 200) probability because the losses are uniformly distributed.

For 33.3% probability of losses greater than 600 million, the expected value of the unpaid loss is 700 million, which implies the policyholder deficit is 100 million.

The EPD is the mean deficit, or 66.7% × 0 + 33.3% × 100 = 33.3 million.

(ii) EPD Ratio

EPD ratio = EPD / Expected Loss = 33.3 / 500 = 6.7%.

(iii) 99% VaR

99% VaR = 794 million (every 1% is 6 million, uniformly distributed between 200 and 800 million)

(iv) 99% TVaR

99% TVaR = (794 + 800) / 2 = 797 million because it is a uniform distribution

17. 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:

General Insurance Financial Reporting Topics, Third Edition, Society of Actuaries

- 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"

Commentary on Question:

This question tests a candidate's understanding of some of the issues regarding responsibilities of the actuary and the Statement of Actuarial Opinion.

Solution:

(a) Identify four potential irregularities described in the above table.

Commentary on Question:

There are many potential irregularities that could be identified. Only four were required for full credit. The model solution is an example of a full credit solution.

- The prior actuary was unable to comment regarding any possible disagreements with ABC.
- Both the net and gross reserves are the same for ABC as of year-end 2016.
- The carried reserves of ABC were 1 million greater than the upper end of the actuarial range of reasonable estimates but the SAO was reasonable
- The carried reserves of ABC were 1 million greater than the upper end of the actuarial range of reasonable estimates but the SAO indicated a significant risk of material adverse deviation

(b) Describe any two actions that the Appointed Actuary should take based upon the irregularities identified in part (a).

Commentary on Question:

Only two actions were required for full credit based upon the irregularities identified in part (a). The model solution is an example of a full credit response using the model solution for part (a) as the basis.

17. Continued

The Appointed Actuary should include an explanation in the Actuarial Report as to why there are no ceded reserves.

The Appointed Actuary should notify the Board that the SAO was incorrect. The SAO should be revised to be redundant. The revised report is to be forwarded to the Domiciliary Commissioner within 5 days of making this determination.

(c) Outline any actions that Mary Martin and ABC should take regarding the year-end 2016 SAO with respect to the omission.

Commentary on Question:
There are a number of actions that Mary Martin and ABC should take regarding the year-end 2016 SAO with respect to the omission. A full credit solution should include at least one action for each of the Appointed Actuary and ABC. The model solution is an example of a full credit solution.

- Mary must revise the SAO since the underlying data was materially in error. The error will more than likely change the type of Opinion to "deficient."
- Accordingly, Mary must notify the Board of the error and its implications in respect of a revised SAO within 5 days of making the determination.
- ABC must provide the Domiciliary Commissioner with the revised SAO within 5 days of receiving it from Mary.

18. Learning Objectives:

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

Learning Outcomes:

(4f) Describe the development of general insurance programs controlled by government or collective insurance industry organizations.

(4g) Describe the mechanisms of operation for government and/or collective insurance industry controlled programs as included in the resources.

Sources:

AAA Flood Insurance Work Group, "The National Flood Insurance Program: Challenges and Solutions"

Cappelletti, A., "Government Provision of General Insurance," Society of Actuaries Study Note

Commentary on Question:

This question tests a candidate's understanding of the government's role in the provision of flood insurance.

Solution:

(a) Identify two main types of flooding that flood coverage must address.

- inland flooding
- coastal flooding

(b) Describe three of these principles or expectations.

Commentary on Question:

There are a number of principles/expectations. Only three were required for full credit. The model solution is an example of a full credit solution.

- The program is to use measurements of flood risk and monitor floodplain management.
- The cost of protection should be shared by those at risk and the public.
- The program should strive for widespread participation to facilitate pooling and prefunding disaster recovery.

(c) Describe two potential benefits and two potential uncertainties that IFIP might have if it offers flood insurance as well as other property coverage.

18. Continued

Commentary on Question:
There are many potential benefits and uncertainties. Only two of each were required for full credit. The model solution is an example of a full credit solution.

Potential Benefits:

- Unlike other property insurers, IFIP will gain policyholder goodwill and trust when they don't have to deny flood claims as uninsured.
- By offering both flood and property coverage, they diversify their risk which can assist in capital management.

Potential Uncertainties:

- Pricing flood coverage will be difficult without a compulsory requirement. Those that are at highest risk would not be able to afford actuarial rates. Subsidies to other property coverages would make these coverages less attractive in the competitive market.
- IFIP would need to compete for other property coverages against an established private insurance market. It may be difficult for IFIP to attract a significant share of the market for this business.

(d) Describe the biggest financial impediment to Islantis in starting the IFIP.

Commentary on Question:
There are several different financial impediments that may be considered the biggest. The model solution is an example of a full credit solution.

The program needs to be prepared for the fact that hurricane activity tends to be cyclical. More than one major storm can be experienced in a single storm season or in two consecutive storm seasons. Multiple major storms in succession could create a difficult financial situation for new program without a commitment to significant government funding.

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:

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

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

Sources:

Cappelletti, A., "Tort Law: Topics for General Insurance Actuaries," Society of Actuaries Study Note

Excerpts from Business Law for Insurance Professionals, Institutes Custom Publishing, Assignment 2 (Tort Law)

Commentary on Question:

This question tests a candidate's understanding of tort costs and tort cost trends.

Solution:

(a) Describe two key purposes of tort compensation.

- To compensate the injured claimant by putting him in a pre-injury condition through financial compensation.
- To serve as deterrent against future similar wrongs by requiring at-fault defendants to be financially liable.

(b) Identify two direct costs of the tort system other than amounts paid to plaintiffs.

Commentary on Question:

There are three direct costs other than payments to claimants. Only two were required for full credit. All three were included in the model solution for informational purposes.

- Legal expenses
- Claim adjustment expenses
- Administration expenses associated with managing torts

(c) Identify two indirect costs of the tort system.

Commentary on Question:

There are several indirect costs. Only two were required for full credit. The model solution is an example of a full credit solution.

19. Continued

- Amounts spent to reduce potential claims
- Opportunity costs from products/services that are withdrawn from the market

(d) Describe the difficulties in getting countrywide data for amounts paid to plaintiffs from torts.

Commentary on Question:
Note that this question was asking about the difficulty in obtaining the information, not the applicability of the information. The model solution is an example of a full credit solution.

Agreements before a tort case are usually kept private and some settlements are kept private. Also, jury verdicts and court awards at the initial lower court level are generally not recorded centrally.

(e) Critique the applicability of the following measures when estimating tort cost trends for liability insurance:

(i) CPI

(ii) Medical care CPI

(iii) U.S. tort costs as a percent of GDP

Commentary on Question:
The model solution is an example of a full credit solution.

(i) CPI
CPI may be used as a proxy but with clear limitations. Tort costs comprise several components that generally trend at different rates. CPI does not capture this as it is only a general measure of inflation that will not specifically relate to tort costs.

(ii) Medical care CPI
Medical care CPI is a better proxy than CPI but it is also of limited value. Medical care CPI is suitable for the bodily injury damages component of tort costs, but it is not generally appropriate to other loss components. Furthermore, the medical costs in medical care CPI may be different than the types of medical costs for bodily injury damages.

19. Continued

(iii) US tort costs as a % of GDP
Actual tort cost trends have been much more volatile than CPI or medical care CPI, although the long-term averages have been somewhat similar in recent years. One needs to take care projecting this forward. Also, there are significant differences in tort costs between countries due to differences in legal systems. Therefore, one must take care in applying U.S. data to other countries.
In addition to this, tort cost trend statistics may include different types of claims than the types of claims from the insurer's liability policies. The trends could be significantly different.

20. 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.

(4d) Discuss market conduct regulation.

Sources:

Insurance Regulation, The Institutes

- Chapter 10 (Producer Regulation)

Commentary on Question:

This question tests a candidate's understanding of insurance producer regulation.

Solution:

(a) Compare independent agencies to exclusive agencies for general insurance with respect to:

(i) Placement of policies

(ii) Ownership of a book of business

Commentary on Question:

The model solution is an example of a full credit solution.

(i) Placement of business:

- An independent agency can place accounts with several insurers through contractual agreements.
- An exclusive agency places business primarily through one insurer and any of its affiliates.

(i) Ownership of business:

- An independent agency owns a "book of business" (i.e., all customer accounts). If an insurer cancels a contract with an independent agent, the agency has the right to move its accounts to another insurer.
- An exclusive agency usually obtains business on the insurer's behalf, and the insurer owns the book of business.

(b) Explain how producer licensing requirements protect both consumers and producers.

Commentary on Question:

The model solution is an example of a full credit solution.

20. Continued

Producer licensing ensures that producers are aware of their responsibilities to act for the benefit of consumers.

By requiring producers to perform their duties competently, licensing helps protect producers as professionals (e.g., by reducing their exposure to professional liability).

(c) Identify two possible reasons for a producer's license to be suspended, revoked, or non-renewed by state regulators.

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

- A materially untrue statement in the license application.
- Commission of an unfair trade practice.