
SOCIETY OF ACTUARIES
Financial and Regulatory Environment – U.S.

Exam GIFREU

AFTERNOON SESSION

Date: Thursday, May 5, 2016

Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 9 questions numbered 13 through 21 for a total of 40 points. The points for each question are indicated at the beginning of the question.
2. Failure to stop writing after time is called will result in the disqualification of your answers or further disciplinary action.
3. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions on the exam booklet.

Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.
2. Write on only one side of a sheet. Start each question on a fresh sheet. On each sheet, write the number of the question that you are answering. Do not answer more than one question on a single sheet.
3. The answer should be confined to the question as set.
4. When you are asked to calculate, show all your work including any applicable formulas.
5. When you finish, insert all your written-answer sheets into the Essay Answer Envelope. Be sure to hand in all your answer sheets because they cannot be accepted later. Seal the envelope and write your candidate number in the space provided on the outside of the envelope. Check the appropriate box to indicate morning or afternoon session for Exam GIFREU.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

****BEGINNING OF EXAMINATION****
Afternoon Session
Beginning with Question 13

13. (6 points)

- (a) (1 point) Describe two reasons why the insurance industry is more highly regulated than many other industries.
- (b) (1 point) Define the following concepts:
 - (i) Regulatory forbearance
 - (ii) Regulatory capture
- (c) (1 point) Describe the ramifications of regulatory forbearance.
- (d) (1 point) Describe the ramifications of regulatory capture.

Although insurance regulation in the U.S. is state-based, it is structured to include systems of peer review and multistate oversight.

- (e) (2 points) Describe two systems of peer review and multistate oversight within the framework of insurance regulation in the United States.

- 14.** (5 points) A method for estimating the premium asset on retrospectively rated policies uses the functional relationship between losses and the retrospective premium. This method makes use of premium development to loss development (PDL) ratios.

The formula approach to calculating PDL ratios for each retro adjustment requires the computation of loss capping ratios for each retro adjustment.

- (a) (1 point) Identify two reasons a loss capping ratio is required.

The following tables include the retrospective rating parameters and loss data information for a retrospectively rated policy:

Basic premium factor	0.25
Expected loss ratio	60%
Loss conversion factor	1.26
Tax multiplier	1.04

Retrospective Adjustment	Expected percentage of loss emerged	Loss capping ratio
First	75%	65%
Second	20%	30%
Third	5%	0%

- (b) (2.5 points) Calculate the cumulative PDL (CPDL) ratio for the first retrospective adjustment.

You are given the following information for a retrospectively rated policy for the policy period subject to its first retrospective adjustment:

Expected future loss emergence	210 million
Premium booked prior to adjustment	225 million

- (c) (0.5 points) Calculate the premium asset for the policy period subject to the first retrospective adjustment with the information in the above table and the ratio calculated in part (b).
- (d) (1 point) Describe the U.S. statutory accounting rule for admitting the premium asset on retrospectively rated policies.

15. (4 points)

- (a) (1 point) Describe two considerations with respect to the investment income used in the calculation of investment yield.

NAIC IRIS Ratio 6 represents a measure of investment yield.

- (b) (1 point) Explain why an IRIS Ratio 6 value that exceeds the acceptable range may be an indicator of financial distress.

The NAIC has developed Financial Analysis Solvency Tools (FAST) scores in addition to IRIS ratios for measuring financial condition with annual statement data. FAST scores and IRIS ratios measure many of the same things, but the process for determining potential financial distress differs.

- (c) (2 points) Compare the FAST process for determining potential financial distress to the IRIS process.

16. (5 points) ASOP 43, *Property/Casualty Unpaid Claim Estimates*, discourages the use of the terms “best estimate” and “actuarial estimate” in measuring unpaid claim estimates, and recommends several alternatives.

- (a) (0.5 points) Explain the issue with the terms “best estimate” and “actuarial estimate” as described in ASOP 43.
- (b) (0.5 points) Identify two alternative terms ASOP 43 recommends in place of the terms “best estimate” and “actuarial estimate.”

Company management has requested that you not show your range of reasonable estimates in the Actuarial Opinion Summary because they consider the range to be proprietary.

- (c) (1 point) Propose a response to company management regarding their request.

Appointed Actuaries rendering a Statement of Actuarial Opinion (SAO) in the U.S. can provide one of five types of opinions. The most common type of opinion is that reserves are reasonable.

- (d) (2 points) Describe the other types of opinions.

ASOP 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, specifies that an actuary should review the most recent prior opinion when preparing an SAO.

- (e) (1 point) Explain what the actuary should determine from the most recent prior opinion.

17. (4 points) Effective solvency monitoring by insurance regulators should encourage insurers to manage their risk. Numerous regulatory methods for solvency monitoring encourage diversification across lines of business to reduce risk.

- (a) (1 point) Explain how diversification across lines of business may decrease risk for an insurer.
- (b) (1 point) Explain how diversification across lines of business may increase risk for an insurer.

In Canada, federal regulation requires the appointed actuary of an insurer to assess the future financial condition of the insurer annually using scenario analysis in the Dynamic Capital Adequacy Testing (DCAT) report.

- (c) (2 points) Describe the two conditions that must be met for an insurer to be considered to have a satisfactory financial condition through the forecast period.

18. (4 points) You are given the following information for a book of business:

	June 30, 2014	Dec. 31, 2014	June 30, 2015	Dec. 31, 2015
Paid Losses, inception to date	0	10,000	25,000	40,000
Case Reserves, as of date	30,000	60,000	50,000	25,000

- Premium of 110,000 was earned evenly during 2014.
 - Estimated audit premium as of March 31, 2015 was 10,000.
 - The expense ratio for this business is 30%, all variable.
 - The actuary estimated IBNR to be 30,000 as of December 31, 2014.
 - The actuary changed his estimate of ultimate losses to be 90,000 as of June 30, 2015. There were no further changes to the estimate of ultimate losses in 2015.
- (a) (0.5 points) Determine the incurred losses recorded in the 2015 income statement for this book of business.
- (b) (0.5 points) Calculate the inception-to-date underwriting result as of December 31, 2015 for this book of business.
- (c) (0.5 points) Identify the organization that establishes and oversees:
- (i) U.S. generally accepted accounting principles (GAAP)
 - (ii) U.S. statutory accounting principles (SAP)
- (d) (1 point) Compare the emphases of U.S. GAAP and U.S. SAP in terms of balance sheet amounts versus income statement amounts.
- (e) (1 point) Compare the treatment of acquisition expenses under U.S. GAAP and U.S. SAP.
- (f) (0.5 points) Describe how U.S. GAAP treats expenses of preparing bids for policies that are not written.

- 19.** (4 points) Ally has a lemonade stand on her front lawn, just outside her home. Sunil drops by for refreshment and offers to insure Ally's lemonade inventory against property damage. Ally tells Sunil she thinks full replacement cost of her lemonade inventory is 25 dollars and that the cooler will always be filled with lemonade to at least half the cooler's capacity.

Sunil establishes Ally's premium at 5 dollars with a full replacement value of 20 dollars based upon the cooler being filled with lemonade to at least half of its capacity at all times. Ally thinks these terms are reasonable and verbally agrees to insure her inventory, paying 5 dollars to Sunil.

- (a) (1.5 points) Explain whether or not Ally and Sunil's agreement satisfies the following three special characteristics that an insurance contract should have:
- (i) Conditional
 - (ii) Utmost good faith
 - (iii) Indemnity

After very successful sales, with only a few full cups of lemonade on the stand, Ally refills her empty cooler with water and then goes inside her home to obtain more supplies, including ice and lemonade mix. While Ally is inside her home, her dog chases a squirrel through the lemonade stand. All of Ally's remaining lemonade spills onto the grass, including her large cooler filled with water. Ally requests payment for a total loss from Sunil. Sunil sees the damage and notes visually that what remains in the bottom of the cooler appears to be only water. Sunil considers nonpayment of the claim on the basis of false representation by Ally.

- (b) (2.5 points) Assess whether or not Sunil can establish false representation by Ally.

- 20.** (5 points) PCB Insurance has two reinsurers, B-Re and Q-Re. You are given the following reinsurance information for PCB:

	B-Re	Q-Re
Status	Unauthorized, Not Certified	Authorized
Total reinsurance recoverables	250	200
Funds held by reporting company under reinsurance treaties	45	36
Letters of credit	55	0
Recoverables on paid losses and paid loss adjustment expenses, 31- 90 days overdue, not in dispute	40	28
Recoverables on paid losses and paid loss adjustment expenses 91-120 days overdue, not in dispute	26	27
Recoverables on paid losses and paid loss adjustment expenses over 120 days overdue, not in dispute	19	6
Recoverables on paid losses and paid loss adjustment expenses, total	120	110
Amounts in dispute included above	20	15
Amounts company received from reinsurer in last 90 days of statement year	8	10
PCB estimate of uncollectible reinsurance recoverables	35	30

Amounts in the table are in millions.

- (3.5 points) Determine PCB's total Schedule F provision for reinsurance.
- (0.5 points) Determine PCB's U.S. GAAP provision for uncollectible reinsurance.
- (1 point) Explain how Schedule F – Part 9, *Restatement of Balance Sheet to Identify Net Credit for Reinsurance*, can be used to assess the financial strength of an insurer.

21. (3 points)

- (a) (1 point) Identify four activities by an insurer that would be investigated as a violation in a state's department of insurance market conduct examination of underwriting.
- (b) (1 point) Describe the fiduciary responsibility of an insurance producer to a policyholder in an insurance transaction.
- (c) (0.5 points) Describe the practice of twisting by insurance producers.
- (d) (0.5 points) Identify two reasons for the suspension, revocation or nonrenewal of a producer's license by a state using the NAIC's Producer Licensing Model Act.

****END OF EXAMINATION****
Afternoon Session

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