

Exam GIFREU

MORNING SESSION

Date: Wednesday, April 29, 2020

Time: 8:30 a.m. – 11:45 a.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 100 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 40 points).
 - a) The morning session consists of 13 questions numbered 1 through 13.
 - b) The afternoon session consists of 9 questions numbered 14 through 22.

The points for each question are indicated at the beginning of the question. Questions 10 - 13 pertain to the Case Study, which is enclosed inside the front cover of this exam booklet.

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.

CASE STUDY INSTRUCTIONS

The case study will be used as a basis for some examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular investment structure to a company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.

****BEGINNING OF EXAMINATION****
Morning Session

- 1.** (5 points) The NAIC creates statutory accounting principles for U.S. insurers in the NAIC Accounting Practices and Procedures Manual through Statements of Statutory Accounting Principles (SSAPs).
- (a) (1.5 points) Provide one example each of a Type I and a Type II material subsequent event as defined in SSAP No. 9, *Subsequent Events*.
- (b) (1.5 points) Compare the treatment in statutory statements for a Type I versus a Type II material subsequent event.

You are preparing statutory financial statements in the U.S. and are given the following information:

- Insurance Company A is the parent company of insurance Subsidiary X and insurance Subsidiary Z.
 - Subsidiaries X and Z both cede 50% of all their business to parent Company A.
 - Parent Company A retrocedes the same business back to both subsidiaries using the following shares: 100% to Subsidiary X, and 0% to Subsidiary Z.
- (c) (1.5 points) Explain why the reinsurance arrangement described above does, or does not, meet the definition of an intercompany pooling arrangement under SSAP No. 63, *Underwriting Pools*.
- (d) (0.5 points) Describe which party or parties are directly liable to the claimant if Subsidiary Z incurs a large claim.

2. (4 points) Companies may appoint either an internal or external actuary for the U.S. Statement of Actuarial Opinion (SAO).

- (a) (0.5 points) Identify one advantage and one disadvantage for the appointment of an internal actuary.
- (b) (0.5 points) Identify one advantage and one disadvantage for the appointment of an external actuary.

There are situations in which an Appointed Actuary (AA) must make use of the work of non-actuaries in the SAO, and that work is material to the Opinion. Actuarial Standard of Practice (ASOP) No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, notes the disclosure requirements for making use of the work of a non-actuary.

- (c) (2 points) Compare the SAO disclosure requirements for the AA under the following two scenarios:
 - (i) (0.5 points) The AA made use of the work of a non-actuary who reports to the AA.
 - (ii) (1.5 points) The AA made use of the work of a non-actuary who does not report to the AA.

An actuary may find it appropriate to use models that incorporate specialized knowledge outside of the actuary's own area of expertise. ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*, outlines the actions required of the actuary in this situation.

- (d) (1 point) Identify four actions an actuary must take according to ASOP No. 38.

3. (5 points)

- (a) (1 point) Explain what is meant by the application of *strict liability* in a tort case.
- (b) (4 points) Assess the potential for the application of *strict liability* for each of the following cases:
- (i) ABC Toys manufactures a popular line of stuffed bears with moveable limbs. The limbs of these toys employ the use of thin metal parts. Failure of these parts may cause sharp pieces to break off. This occurred after a small child was chewing on the stuffed bear's arm and one of the sharp pieces caused serious injury to the child. The parents of the child are suing ABC Toys for damages.
 - (ii) The Clark family stores large quantities of chemicals to clean their pool. They have taken reasonable care to ensure the chemicals are stored safely. A lightning strike caused the storage container for these chemicals to fail. The chemicals spilled into the property of their neighbor, the Griswald family. The Griswald family sues the Clark family for damages to their property.
 - (iii) The Alpha family has a small dog which escaped from their yard by digging under the fence. The dog went over to the Beta family's property and chewed all four tires on their vehicle. This was the first time the dog had done anything like this. The Beta family sues the Alpha family for damages.
 - (iv) Beeline Accounting prepares the financial statements for a small business, Baubles, that sells handmade jewelry. A significant error was made in the financial statements which caused Baubles to pay a large tax penalty. Baubles sues Beeline for damages.

4. (5 points)

- (a) (1 point) Provide two reasons why standard actuarial ratemaking methodologies should not be used to price earthquake insurance.

Since 1985, California has made it mandatory for insurers of residential properties to offer earthquake coverage. Following the Northridge Earthquake in 1994, it became very difficult for residential customers to insure their property against earthquakes in California.

- (b) (0.5 points) Identify two actions taken by insurance companies in California that led to this difficulty for customers.

In 1996 the California Legislature established the California Earthquake Authority (CEA).

- (c) (0.5 points) Describe the CEA's stated mission.
- (d) (1 point) Explain why California legislators believed that the CEA would succeed in fulfilling its stated mission.
- (e) (1 point) Describe two other activities that the CEA has engaged in other than those pertaining to the stated mission.

If an earthquake event required the CEA to make claim payments totaling \$16 billion, it would need to use three sources of funds.

- (f) (1 point) Provide the allocation of claim payments by source of CEA funds for such an earthquake event.

5. (4 points) You are given the following statutory annual statement Schedule F information for U.S. insurer Mando General Insurance Company (Mando) as of year-end 2018 (all amounts are in millions):

| 2018 Schedule F – Part 6 | As Reported (Net of Ceded) | Restatement Adjustments | Restated (Gross of Ceded) |
|---|----------------------------------|----------------------------|---------------------------------|
| ASSETS (Page 2, Col. 3) | 1 | 2 | 3 |
| 1. Cash and invested assets | 600 | | |
| 2. Premiums and considerations | 30 | | |
| 3. Reinsurance recoverable on loss and loss adjustment expense (LAE) payments | 120 | | |
| 4. Funds held by or deposited with reinsured companies | 90 | | |
| 5. Other assets | 60 | | |
| 6. Net amount recoverable from reinsurers | | | |
| 7. Protected cell assets | 0 | | |
| 8. Totals | 900 | | |
| LIABILITIES (Page 3) | | | |
| 9. Losses and loss adjustment expenses | 200 | | |
| 10. Taxes, expenses and other obligations | 6 | | |
| 11. Unearned premiums | 80 | | |
| 12. Advance premiums | 0 | | |
| 13. Dividends declared and unpaid | 4 | | |
| 14. Ceded reinsurance premiums payable | 10 | | |
| 15. Funds held by company under reinsurance treaties | 40 | | |
| 16. Amounts withheld or retained for account of others | 2 | | |
| 17. Provision for reinsurance | 30 | | |
| 18. Other liabilities | 8 | | |
| 19. Total liabilities excluding protected cell business | 380 | | |
| 20. Protected cell liabilities | 0 | | |
| 21. Surplus as regards policyholders | 520 | | |
| 22. Totals | 900 | | |

- Amounts for columns 2 and 3 of the schedule above are not available.
- The amount in column 1 of line 2 relates to direct written premiums only.
- None of the liabilities in column 1 of lines 10, 13, 16 and 18 are affected by reinsurance.

5. Continued

| Selected amounts from 2018 Schedule F – Part 3 | | | | | | | |
|--|----------------------------|----------|--------------------------|-------------------------|--------------------|-------------------|-------------------|
| | Reinsurance Recoverable On | | | | | | |
| | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | Paid Losses | Paid LAE | Known Case Loss Reserves | Known Case LAE Reserves | IBNR Loss Reserves | IBNR LAE Reserves | Unearned Premiums |
| Unauthorized | 20 | 2 | 35 | 19 | 25 | 10 | 15 |
| Authorized | 80 | 18 | 145 | 20 | 75 | 40 | 45 |
| Total | 100 | 20 | 180 | 30 | 100 | 50 | 60 |

- Mando has no transactions with any pools (mandatory, voluntary or intercompany).
- (a) (2.5 points) Determine the *Restated (Gross of Ceded)* amount for Mando’s 2018 Schedule F – Part 6, line 6, column 3 (*Net amount recoverable from reinsurers*).
- (b) (0.5 points) Determine the *Restated (Gross of Ceded)* amount for Mando’s 2018 Schedule F – Part 6, line 21, column 3 (*Surplus as regards policyholders*).
- (c) (0.5 points) Explain why the Schedule F provision for reinsurance is formula-based.
- (d) (0.5 points) Explain why the Schedule F provision for reinsurance does not result in a deferred tax asset.

- 6.** (6 points) Flood insurance for most homeowners in the U.S. is provided by the federal government through the National Flood Insurance Program (NFIP). Some private insurers in the U.S. have begun offering primary flood insurance for homeowners.

There are several differences between NFIP policies and private insurance policies.

- (a) (3.5 points) Compare NFIP policies with private insurance policies for each of the following:
- (i) Coverage disputes
 - (ii) Policy limits
 - (iii) Valuation basis for claims
 - (iv) Underwriting
- (b) (1.5 points) Describe two benefits to private insurers in the U.S. for offering flood insurance coverage.
- (c) (1 point) Describe two uncertainties that make private insurers in the U.S. wary of offering flood insurance coverage.

7. (5 points) The NAIC Instructions to the U.S. Statement of Actuarial Opinion (SAO) define five opinion categories:

- Reasonable
- Deficiency or Inadequate
- Redundant or Excessive
- Qualified Opinion
- No Opinion

- (a) (0.5 points) Describe when an Appointed Actuary (AA) should issue a *Qualified Opinion* versus a *No Opinion* SAO.
- (b) (1 point) Compare the required disclosures for a *Qualified Opinion* versus a *No Opinion* SAO.

U.S. insurer XYZ books reserves of \$500 million, including \$75 million for asbestos exposures. The AA for XYZ believes that the asbestos liabilities cannot be reasonably estimated, with estimates ranging from \$50 million to \$250 million.

- (c) (0.5 points) Select the opinion category the AA should use for XYZ. Justify your selection.

Common materiality standards include:

- Percentage of reserves
 - Percentage of surplus
 - Percentage of income
 - Adverse deviation that reduces capital below minimum requirements
- (d) (2 points) Identify one potential drawback for each of the materiality standards listed above when used by an AA for an SAO.

The International Actuarial Association (IAA) developed International Standard of Actuarial Practice 1 (ISAP 1), *General Actuarial Practice*. ISAP 1 recommends three possible actions for actuaries who cannot find a satisfactory way to resolve data deficiencies that are likely to be material. One of these is: *Work with the principal to modify the actuarial services or obtain appropriate data*.

- (e) (1 point) Describe the two other actions for resolving material data deficiencies recommended by ISAP 1.

8. (5 points) In the U.S., a state's department of insurance (DOI) is responsible for administering the state's insurance code and ensuring that insurers conducting business in the state comply with all state insurance laws.

(a) (2 points) Describe the four key features of a typical state regulatory system.

State legislatures can affect insurance regulation through insurance laws and oversight of their DOI. In addition, they can affect insurance regulation through premium laws and lobbying laws.

(b) (1 point) Describe the following with respect to premium laws:

(i) Situations they are intended to cover

(ii) Typical requirements

(c) (0.5 points) Identify two concerns that give rise to lobbying laws.

(d) (0.5 points) Describe two typical controls included in lobbying laws.

The NAIC provides an accreditation program for state DOI's to aid in consistency of regulation through the country.

(e) (0.5 points) Identify two areas in which state DOI's must meet NAIC standards for NAIC accreditation.

(f) (0.5 points) Identify one concern that has been expressed about this accreditation program.

9. (4 points) In 1923, the standard for admitting expert evidence at the federal level was defined by the decision in the case of *Frye v. United States*. This standard was adopted in many states.

In 1993, the Supreme Court of the United States changed the standard for admitting expert evidence in the case of *Daubert v. Merrell Dow Pharmaceuticals*.

Compare the standard for admitting expert evidence from *Daubert v. Merrell Dow Pharmaceuticals* with the prior standard from *Frye v. United States* and the reason for the change in the standard.

**Questions 10 to 13 pertain to the Case Study.
Each question should be answered independently.**

- 10.** (4 points) R-Dan's 2017 Insurance Expense Exhibit (IEE) included the following amounts:

| Selected rows and columns from the 2017 IEE Part II | Unpaid Losses | Loss Adjustment Expenses | | Unearned Premium Reserve | Agents' Balances |
|---|----------------|--------------------------|---------------|--------------------------|------------------|
| | | DCC Unpaid | AO Unpaid | | |
| | Col 13 | Col 15 | Col 17 | Col 19 | Col 21 |
| Private passenger auto PD | 1,400 | 200 | 1,700 | 40,500 | 14,000 |
| TOTALS | 203,200 | 32,200 | 13,500 | 179,600 | 48,000 |

| Selected rows and columns from the 2017 IEE Part II | Other Underwriting Expenses Incurred | | | |
|---|--------------------------------------|------------------------|--|---------------------------|
| | Commission & Brokerage | Taxes, Licenses & Fees | Other Acquisitions, Field Supervision & Collection | General Expenses Incurred |
| | Col 23 | Col 25 | Col 27 | Col 29 |
| Private passenger auto PD | 1,400 | 200 | 1,700 | 14,000 |
| TOTALS | 203,200 | 32,200 | 13,500 | 48,000 |

You have been informed that the *other underwriting expenses incurred* in R-Dan's 2017 and 2018 Annual Statements were miscategorized as follows:

For private passenger auto PD (APD), 40% of the amounts listed under the category *general expenses* should have been included in the category *taxes, licenses & fees*.

Calculate the following amounts for R-Dan's 2018 IEE, adjusting for the miscategorized *other underwriting expenses* wherever necessary.

- (i) Mean policyholders' surplus (PHS) allocated to APD
- (ii) Funds attributable to insurance transactions (FAIT) for APD

**Questions 10 to 13 pertain to the Case Study.
Each question should be answered independently.**

11. (5 points) R-Dan's five-year plan anticipates additional paid-in capital from the parent company in 2019. However, management has commented that future capital infusions after 2019 will probably not be needed because their 2018 RBC ratio is currently very conservative at over 600%.

(a) (3 points) Critique management's comment.

After considering the company's business plan, Sue Calvin has suggested purchasing additional reinsurance going forward. Management does not want to do this because they believe it will reduce earned premium and, therefore, increase the loss ratio.

(b) (1 point) Recommend additional proportional or non-proportional reinsurance for R-Dan considering management's concern. Justify your recommendation.

(c) (1 point) Contrast the effect of proportional versus non-proportional reinsurance on each of the following risk charges in the NAIC RBC formula.

(i) Premium Risk

(ii) Reserve Risk

(iii) Credit Risk

**Questions 10 to 13 pertain to the Case Study.
Each question should be answered independently.**

- 12.** (4 points) R-Dan's company average loss and loss adjustment expense ratios (gross and net of reinsurance) from the 2018 Annual Statement Schedule P are as follows:

| Company Average Loss and Loss Adjustment Expense Ratios | | | | | | |
|--|------------|------------|-----------|------------|-----------|--------------|
| | H/F | PPA | CA | APD | SP | TOTAL |
| Gross | 83.9% | 91.6% | 58.0% | 78.1% | 0.0% | 85.1% |
| Net | 83.5% | 90.8% | 65.0% | 78.9% | 0.0% | 85.2% |

H/F = Homeowners/Farmowners

PPA = Private Passenger Automobile Liability/Medical

CA = Commercial Auto/Truck Liability/Medical

APD = Automobile Physical Damage

SP = Special Property (Fire, Inland Marine)

- (a) (2.5 points) Calculate R-Dan's NAIC RBC basic net written premium (NWP) charge for the H/F line of business.

The three-year average annual written premium growth rate for R-Dan as of year-end 2018 is as follows:

| Three-Year Written Premium Growth Rate | | | | | | |
|---|------------|------------|-----------|------------|-----------|--------------|
| | H/F | PPA | CA | APD | SP | TOTAL |
| Gross | 25.0% | 5.0% | 10.0% | 7.0% | 0.0% | 11.5% |
| Net | 26.0% | 5.0% | 10.0% | 8.0% | 0.0% | 12.2% |

The sum of the NAIC RBC basic NWP charges across all lines of business is given as \$57,192,000.

- (b) (1.5 points) Calculate R-Dan's NAIC RBC total NWP charge, R5.

**Questions 10 to 13 pertain to the Case Study.
Each question should be answered independently.**

13. (4 points) The NAIC Property/Casualty Annual Statement includes segmentation by line of business in several exhibits. However, the line of business segmentation is not consistent among all the exhibits.

(a) (1 point) Explain why the segmentation shown in the Underwriting and Investment Exhibit is not the same as that shown in Schedule P.

R-Dan General Insurance Company (R-Dan) has overstated its 2018 Schedule P Part 1 columns 10 and 23 by 25%. The amounts for Schedule P Part 1 columns 1 through 9 and 13 through 22 are stated correctly.

(b) (0.5 points) Explain how this overstatement affected R-Dan's reported paid and unpaid losses.

Assume that one of the reinsurers for R-Dan became insolvent January 1, 2019. This reinsurer was responsible for all of the reinsured amounts for the Private Passenger Automobile Liability line of business for accidents occurring before January 1, 2013.

(c) (2.5 points) Explain the implications of this for R-Dan at year-end 2019.

****END OF EXAMINATION**
Morning Session**

USE THIS PAGE FOR YOUR SCRATCH WORK

USE THIS PAGE FOR YOUR SCRATCH WORK

USE THIS PAGE FOR YOUR SCRATCH WORK