

Exam GIFREU

Date: Friday, October 25, 2024

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has 13 questions numbered 1 through 13 with a total of 70 points.

The points for each question are indicated at the beginning of the question. Questions 7 to 10 pertain to the Case Study.

2. 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 provided in this document.

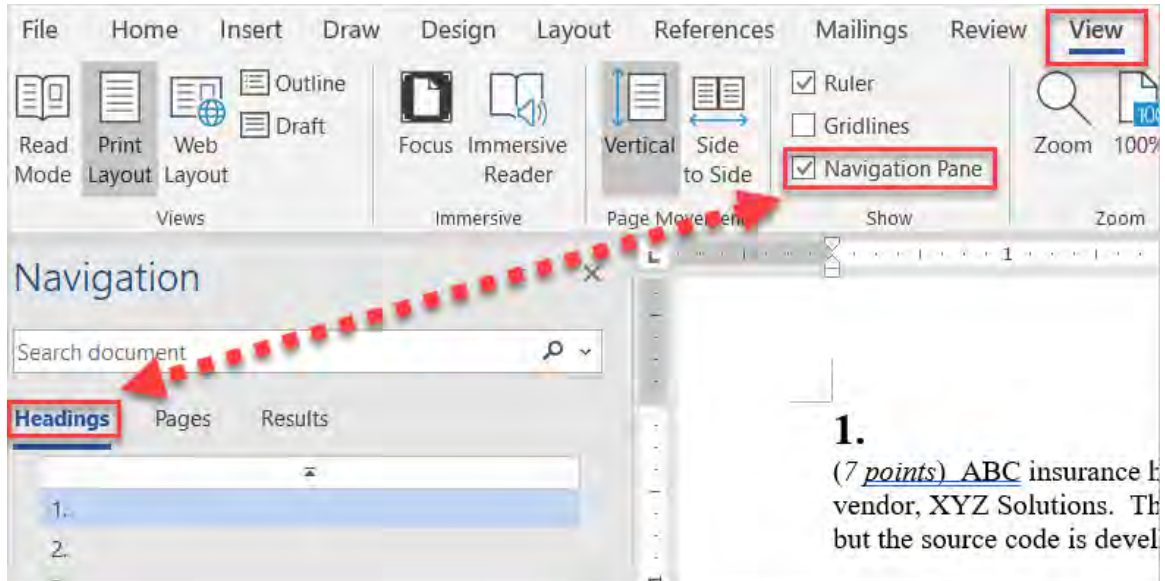
Written-Answer Instructions

1. Each question part or subpart should be answered either in the Word document or the Excel file as directed. Graders will only look at work in the indicated file.
 - a) In the Word document, answers should be entered in the box marked ANSWER. The box will expand as lines of text are added. There is no need to use special characters or subscripts (though they may be used). For example, β_1 can be typed as beta_1 and σ^2 can be typed as sigma^2.
 - b) Calculations should be done in Excel and entered as formulas. Performing calculations on scratch paper or with a calculator and then entering the answer in the cell will not earn full credit. Formatting of cells or rounding is not required for credit. Rows can be inserted to the answer input area as required to provide space for your answer.
 - c) Individual exams may provide additional directions that apply throughout the exam or to individual items.
2. The answer should be confined to the question as set.
3. Prior to uploading your Word and Excel files, each file should be saved and renamed with your unique candidate number in the filename.
4. The Word and Excel files that contain your answers must be uploaded before the five-minute upload period expires.

Navigation Instructions

Open the Navigation Pane to jump to questions.

Press Ctrl+F, or click View > Navigation Pane:



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 the 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.

1.

(4 points) Two financial accounting systems used by general insurers, International Financial Reporting Standards (IFRS) and U.S. Statutory Accounting Principles (SAP), approach valuation of assets differently.

- (a) (2 points) Contrast attributes of the fair value versus the amortized cost of an asset.

ANSWER:

- (b) (1 point) Describe two conditions whereby debt securities may be held at amortized cost under IFRS.

ANSWER:

- (c) (1 point) Describe two conditions whereby the change in fair value of an asset may be treated as comprehensive income under IFRS

ANSWER:

2.

(3 points) In the United States, one of the procedures included in insurer solvency regulation is a state examiners' bench audit.

- (a) (1 point) Describe what is included in this procedure.

ANSWER:

Another procedure used is a special association examination.

- (b) (2 points) Describe two of the three situations that can trigger use of this procedure.

ANSWER:

3

(6 points) The Appointed Actuary (AA) of a U.S.-based insurer, QRS Insurance, provides a P&C Statement of Actuarial Opinion (SAO).

There are five possible types of SAOs. The most common type of SAO is *reasonable*.

- (a) (2 points) Describe the four other types of SAOs.

ANSWER:

You are given the following information:

- The AA’s materiality standard for QRS is 10 million.
- The AA’s estimated reasonable range of reserves is 225 million to 275 million.
- The AA’s range excludes amounts from a voluntary pool (Pool X) in which QRS participates.
- QRS has a 5% share in this voluntary pool.
- Pool X carries reserves of 950 million.
- The SAO for Pool X is signed by an independent qualified actuary and is categorized as “reasonable”.
- The Pool X Actuarial Opinion Summary (AOS) and Actuarial Report were not made available to the QRS AA before the QRS SAO was to be issued.
- The QRS AA does not have the time to perform an independent quantitative analysis on Pool X’s reserves before issuing the SAO.
- The QRS Annual Statement reports reserves of 270 million. These reported reserves include a provision for its share of Pool X carried reserves.

- (b) (2.5 points) Select three types of SAOs that could be provided for QRS with the information available. Justify each type selected.

ANSWER:

- (c) (1.5 points) Select a type of SAO from part (b) that is the most appropriate for QRS in this scenario. Justify your selection.

ANSWER:

4.

(9 points) The NAIC RBC formula includes a loss concentration factor (LCF) and a written premium concentration factor (WPCF).

- (a) (1 point) Show the formula for each of LCF and WPCF.

ANSWER:

- (b) (1 point) Explain how each of the concentration factors gets applied within the RBC formula.

ANSWER:

The NAIC RBC formula includes a charge for excessive premium growth.

- (c) (1.5 points) Describe the following regarding the charge for excessive premium growth:
- (i) Formula(s) to compute the charge
 - (ii) Method(s) for including the charge in the RBC formula

ANSWER:

The NAIC RBC formula includes a reinsurance credit risk adjustment.

- (d) (1.5 points) Describe the following regarding this adjustment:
- (i) Purpose of the adjustment
 - (ii) Method for application of the adjustment

ANSWER:

4. Continued

Financial rating company A.M. Best has its own risk-based formula for net required capital (NRC), referred to as Best's Capital Adequacy Ratio (BCAR) NRC. The BCAR NRC is in many ways similar to the NAIC RBC formula. However, there are several major differences.

- (e) (2 points) Describe four major differences.

ANSWER:

An interactive meeting between a financial rating company and an insurer is required for the insurer to obtain an interactive financial rating. During the interactive meeting, the financial rating company will consider certain qualitative attributes of the insurer.

- (f) (1 point) Identify four of these qualitative attributes.

ANSWER:

For each qualitative attribute considered, the financial rating company will ask the insurer's management a number of questions.

- (g) (1 point) Provide two such questions for one of the attributes identified in part (f).

ANSWER:

5.

(5 points)

- (a) (1.5 points) Describe two notable failures of regulation across the financial services industry related to (or during) the economic crisis of 2007-2009.

ANSWER:

According to the article “The Economic Crisis and Lessons from (and for) U.S. Insurance Regulations” by Vaughan, the simplest explanation for regulatory failures has been that regulators are subject to human mistakes. These failures of regulation may be classified as due to either of the following causes: *regulatory forbearance* or *regulatory capture*.

- (b) (1.5 points) Explain how each of these two causes of regulatory failure can contribute to insurance company insolvency.

ANSWER:

- (c) (2 points) Explain how each of the causes of failures in part (b) relate to a notable failure of regulation cited in your solution to part (a).

ANSWER:

6.

(5 points) Regulators from an international jurisdiction are looking to ensure that their new insurance regime follows prudential supervision.

- (a) (1 point) Describe what makes actuaries good candidates to be involved in the prudential supervision of insurance according to the IAA paper “The Function of the Actuary in Prudential Supervision.”

ANSWER:

- (b) (2 points) Describe four key insurance company functions where active actuarial participation may be considered valuable under a regime of prudential supervision.

ANSWER:

Actuaries may help determine whether the total assets of the insurer can meet the following:

- I. Funding adequacy
 - II. Earnings capacity
- (c) (2 points) Describe what each of I and II requires in this determination.

ANSWER:

**Questions 7 through 10 pertain to the Case Study.
Each question should be answered independently.**

7.

Provide the response for this question in the Excel spreadsheet.

(4 points) You are given the following additional non-statutory information for R-Dan:

Information as of December 31, 2023	Amounts in millions
Estimate of R-Dan's franchise value for renewals and distribution systems	55.8
Estimate of risk margins for insurance risk	10.2
Bad debts	0.9
Discount factor as a percentage of unpaid net losses and loss adjustment expenses (L&LAE) using a rate based on R-Dan's investment portfolio	91.8%
Discount factor as a percentage of unpaid net L&LAE using a rate based on risk-free investments	95.6%
Deferrable underwriting and acquisition expenses as a percent of premium	11.7%
Ratio of market value to statutory value for invested assets	1.015

- (a) (2 points) Estimate R-Dan's capital under the following financial reporting systems using high-level adjustments:
- (i) U.S. GAAP
 - (ii) IFRS 17
 - (iii) Market value
- (b) (1 point) Describe how the market value of capital is typically estimated for an insurer that is not a publicly traded company.

Total equity must be allocated to lines of business in order to measure the return on equity (ROE) for a line of business. There are many different methods for allocating equity to lines of business.

- (c) (1 point) Explain why any allocation method selected may be considered arbitrary for general insurance.

*Questions 7 through 10 pertain to the Case Study.
Each question should be answered independently.*

8.

Provide the response for this question in the Excel spreadsheet.

(5 points) A recent sample of claims from R-Dan's Homeowners line of business produced the following relativities of Adjusting & Other (AO) expenses by type of claim:

Reported claim	4.5
Claim closed with payment	3.0
Claim closed with no payment	1.5
Outstanding claim	1.0

R-Dan's Homeowners AO expenses paid for calendar year 2023 were 13.25 million.

- (a) (4 points) Calculate the calendar year 2023 AO expense payments by accident year using the methodology from *General Insurance Financial Reporting Topics*, the sample relativities provided here, and the claim counts from R-Dan's Annual Statement.
- (b) (1 point) Determine if the amounts from part (a) are consistent with the amounts reported in R-Dan's Annual Statement.

*Questions 7 through 10 pertain to the Case Study.
Each question should be answered independently.*

9.

Provide the response for this question in the Excel spreadsheet.

(4 points) R-Dan's total reinsurance cessions (premiums, losses and loss adjustment expenses as reported in R-Dan's annual statement) are assumed by two reinsurers as follows:

Reinsurer	Share of R-Dan's Ceded		Secured by Reinsurer (% Reinsurer's All Lines Share)	Amount in Dispute (% Reinsurer's All Lines Share)
	Automobile Liability (Private Passenger and Commercial)	All Other Lines of Business		
A-Re	70%	10%	65%	9.3%
B-Re	30%	90%	55%	4.6%

- A-Re, B-Re, and R-Dan are not affiliated with each other in any way.
- The percent distribution by line of business (LOB) for ceded unearned premium is the same as that for ceded earned premium.
- The percent distribution by LOB for amounts recoverable from reinsurers on R-Dan's paid claims is the same as that for reinsurance already recovered on R-Dan's paid claims.
- All amounts in dispute are in arbitration.

Complete the following for R-Dan's Annual Statement Note 23, Reinsurance, as of December 31, 2023:

- (i) (3 points) Note 23A, Unsecured Reinsurance Recoverables
- (ii) (1 point) Note 23B, Reinsurance Recoverables in Dispute

*Questions 7 through 10 pertain to the Case Study.
Each question should be answered independently.*

10.

Provide the response for this question in the Excel spreadsheet.

(12 points) An independent review of R-Dan’s reserves determined that the insurer’s total loss and loss adjustment expense (L&LAE) reserves should have been 2% higher at year-end 2022 and 17% higher at year-end 2023.

R-Dan’s management is reviewing the insurer’s NAIC IRIS ratios under the following two scenarios:

I. Using amounts as reported in the 2023 financial statement.

For scenario I, 2023 IRIS Ratios 5, 11, 12, and 13 for R-Dan are as follows:

Ratio 5, Two-year overall operating ratio	102.5%
Ratio 11, One-year reserve development to policyholders surplus (PHS)	17.3%
Ratio 12, Two-year reserve development to PHS	19.7%
Ratio 13, Estimated current reserve deficiency to PHS	16.0%

II. Using amounts as reported in the 2023 financial statement after making all required adjustments as determined in the independent review.

For scenario II, it is assumed that there is no premium deficiency reserve (PDR) to be included in the results.

- (a) (8 points) Calculate R-Dan’s 2023 IRIS ratios 5, 11, 12 and 13 under scenario II.
- (b) (1 point) Determine if IRIS ratios 5, 11, 12 and 13 are in the usual range for each of scenarios I and II.

10. Continued

You are provided with the following amounts (in thousands) from R-Dan's 2023 RBC calculations under scenario I:

R₀	R₁	R₂	R₃	R₄	R₅	R_{CAT}
150	8,820	5,290	2,250	33,870	47,000	18,440

R₃ and R₄ are presented after the adjustment for credit risk from reinsurance recoverables.

- (c) (1.5 points) Calculate R-Dan's 2023 NAIC RBC Ratio under both scenarios.
- (d) (1.5 points) Explain what adjustments may be required to R-Dan's projected financials (Section 6 of the case study) to be consistent with scenario II.

11

(4 points)

(a) (2 points) Describe how each of the following may influence insurance regulation.

- I. Consumers
- II. News media
- III. Insurance Regulatory Examiners Society (IRES)
- IV. Insurance industry trade associations

ANSWER:

(b) (1 point) Describe two ways that market conduct regulation can be used to protect insurance consumers.

ANSWER:

Departments of Insurance (DOIs) require funds to operate.

(c) (1 point) Identify four sources of funding for DOI operations.

ANSWER:

12.

(4 points) Statement of Statutory Accounting Principle (SSAP) No. 53 provides the U.S. statutory accounting rules for general insurance contract premiums.

- (a) (1 point) Describe the circumstances under which a premium deficiency reserve should be recorded under the rules of SSAP No. 53 for a general insurance company.

ANSWER:

SSAP No. 66 provides the accounting rules for retrospectively rated contracts.

- (b) (1 point) Describe how accrued additional retrospective premiums are to be recorded under the rules of SSAP No. 66 for a general insurance company.

ANSWER:

- (c) (1 point) Identify two SSAP No. 66 disclosures.

ANSWER:

Definitions for portfolio reinsurance are include in both SSAP 62R and the NAIC Annual Statement Instructions regarding Schedule F.

- (d) (1 point) Identify the difference between the two definitions.

ANSWER:

13.

(5 points)

- (a) (1 point) Compare the use of internal appointed actuaries (AAs) versus external AAs with respect to independence.

ANSWER:

The actuarial report supporting the AA's statement of actuarial opinion (SAO) has both primary and secondary intended users.

- (b) (1 point) Identify two each for the following:

- (i) Primary intended users
- (ii) Secondary intended users

ANSWER:

In the United States, premium reserves are generally outside the scope of the AA's SAO. However, they are within the scope of the AA's SAO for long-duration contracts.

- (c) (1 point) State the two conditions for a contract to be categorized as a long-duration contract.

ANSWER:

If the AA issues a qualified SAO for a U.S general insurer, four disclosures specific to a qualified opinion are required.

- (d) (2 points) Describe these four required disclosures.

ANSWER:

****END OF EXAMINATION****