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

Exam GIFREU

MORNING SESSION

Date: Thursday, April 26, 2018
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 12 questions <u>numbered 1 through 12</u>.

   b) The afternoon session consists of 8 questions <u>numbered 13 through 20</u>.

   The points for each question are indicated at the beginning of the question. Questions 9 - 12 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.

1. (*5 points*) Captive insurance companies have gained widespread acceptance in the last few decades.

    (a)   (*1.5 points*) Describe the key characteristics for the following types of captive structure:

        (i)   Pure Captive

        (ii)   Group Captive

        (iii)   Rental Captive

    (b)   (*1 point*) Describe two motives for establishing a captive.

    (c)   (*1 point*) Identify four key considerations in selecting a domicile for a captive.

    (d)   (*1.5 points*) 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

2. (*6 points*) You are an employee and Appointed Actuary for a general insurer domiciled in the U.S., Long River Insurance Company (Long River). You were appointed by the Board of Directors as Chief Actuary and Appointed Actuary on March 1, 2016.

While reviewing results as of June 30, 2017, you observe an issue with the level of net loss reserves. Long River management does not agree that there is an issue. The nature of the disagreement is that you believe Long River will incur losses in a high level aggregate excess of loss reinsurance treaty and that these losses will exceed the reinsurance treaty's limit of liability. This would create a need for higher levels of net loss reserves on Long River's year-end 2017 NAIC Annual Statement. The company's senior management does not think incurred losses will exceed the excess layer limit and that no increase in loss reserves is indicated.

You believe that there will be a risk of material adverse deviation (RMAD) at year-end 2017 if the company does not report loss reserves for losses incurred above the high excess reinsurance treaty.

(a) (*3.5 points*) 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

You inform the company's senior management that unless there is agreement on a reasonable net loss reserve level, you will resign as of November 30, 2017. They decide that they will not change the level of net reserves in consideration of the excess loss treaty and you resign.

(b) (*1.5 points*) 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.

(c) (*1 point*) Describe what you, as the former Appointed Actuary, are professionally obligated to do after the Board replaces you with a new Appointed Actuary.

3. (*6 points*) As an actuary at the State Insurance Department, you are responsible for examining Schedule F submitted by insurers in your jurisdiction. While reviewing ceded reinsurance listed in Schedule F, Part 3, Column 5 you look for indicators of fronting contracts.

    (a)   (*1 point*) 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.

    (b)   (*2 points*) Explain why each of the four types of reinsurance identified in (a) should be exempt from being identified as fronting contracts.

You are reviewing the NAIC Annual Statement Schedule F for Antarctic Pacific Insurance Company (Antarctic Pacific). Antarctic Pacific uses two unauthorized reinsurers, ABC and XYZ. You collect the following information:

(Amounts in 000s)	ABC	XYZ
Total recoverables	1,000	1,500
Recoverables that are more than 90 days overdue	800	200
Funds held by Antarctic Pacific as security	100	0
Letters of Credit to Antarctic Pacific as security	0	1,100
Ceded balance payable to Antarctic Pacific	0	50
Amounts in dispute	100	200

    (c)   (*2 points*) Calculate Antarctic Pacific's Schedule F total provision for reinsurance with ABC and XYZ.

The Schedule F total provision for reinsurance can be used for evaluating an insurer's uncollectible reinsurance recoverables.

    (d)   (*1 point*) Describe two other statutory or audited sources of information that can be used to evaluate an insurer's uncollectible reinsurance recoverables.

4. (*3 points*) There are four broad categories of financial analysis ratios for all firms:

        I.   Activity / Efficiency
        II.   Liquidity
        III.   Debt / Solvency
        IV.   Profitability

(a) (*2 points*) Describe the purpose of each of the four categories of financial ratios in financial analysis.

Insurance regulators make use of liquidity and profitability ratios.

(b) (*1 point*) Provide an example of an NAIC IRIS Ratio for each of the following:

    (i)   Liquidity

    (ii)   Profitability

5. (*5 points*) The Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) advise that accounting estimates should be unbiased.

    (a)   (*0.5 points*) Explain the meaning of *an unbiased estimate* in this context.

U.S. statutory accounting is specific as to the treatment of accounting changes as described in NAIC Statement of Statutory Accounting Principles (SSAP) 3, "Accounting Changes and Corrections of Errors."

    (b)   (*0.5 points*) Describe how a change in accounting estimate should be reported in statutory financial statements.

    (c)   (*0.5 points*) Describe how the correction of an error in previously filed statutory financial statements should be reported in current statutory financial statements.

    (d)   (*0.5 points*) Describe the disclosure required following the correction of a material error in statutory financial statements.

NAIC SSAP 55, "Unpaid Claims, Losses and Loss Adjustment Expenses," includes a number of rules specific to high deductible policies.

    (e)   (*1 point*) Describe two rules specific to high deductible policies.

U.S. statutory accounting includes rules on the reporting of retroactive reinsurance in the Annual Statement.

    (f)   (*0.5 points*) Describe the reporting of ceded retroactive reinsurance in the Annual Statement balance sheet.

Insurance regulators require an actuarial opinion on an insurer's statutory reserves.

    (g)   (*0.5 points*) 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.

International Standard of Actuarial Practice 1 – General Actuarial Practice describes three actions an actuary should consider when faced with material data deficiencies in their work.

    (h)   (*1 point*) Describe two of the three actions.

6. (*5 points*) The auto insurance industry has begun using telematics to collect data for use in underwriting and rating.

     (a)   (*2 points*) 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.

     (b)   (*2 points*) Describe one pro and one con for each of the following types of telematics devices:

          (i)   Professionally installed devices

          (ii)   Smartphone application

     (c)   (*1 point*) Identify one potential benefit that a telematics program may have for each of the following:

          (i)   the insured

          (ii)   the public

7. (*6 points*)

    (a)   (*1 point*) Describe two different types of non-compensatory tort awards.

    (b)   (*1 point*) Identify four examples of acts by insurers that have led to non-compensatory tort awards against insurers in bad faith litigation.

A company is considering expanding into a new territory. Regulators in the territory are considering tort reforms to control non-compensatory tort awards.

    (c)   (*1 point*) Describe two examples of tort reforms that the regulators could consider.

In *State Farm v. Campbell*, the Supreme Court of the United States (SCOTUS) ruled on the non-compensatory tort award for punitive damages in an insurer bad faith litigation. In its ruling, the SCOTUS identified a number of considerations to determine if these types of awards are warranted. One of these was reprehensibility.

    (d)   (*2 points*) Describe four of these considerations other than reprehensibility.

The SCOTUS ruling in *State Farm v. Campbell* identified five factors to assess reprehensibility.

    (e)   (*1 point*) Identify two of the reprehensibility factors from the ruling.

8. (*4 points*) In many countries, workers compensation (WC) benefits are provided by the government.

(a) (*1.5 points*) Provide three reasons why WC may be considered social insurance.

(b) (*2.5 points*) 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

9. (*7 points*) You are reviewing R-Dan General Insurance Company's (R-Dan's) NAIC IRIS Ratios.

  (a) (*2.5 points*) Determine whether or not R-Dan's Ratio 11 (One-Year Reserve Development Ratio) was exceptional for each of the last three calendar years.

  (b) (*1.5 points*) Calculate R-Dan's Ratio 5 (Two-Year Operating Ratio) for 2017.

  (c) (*0.5 points*) Assess the result of R-Dan's Ratio 5 from a regulatory perspective.

  (d) (*1 point*) Explain why R-Dan's Ratio 5 understates current profitability.

  (e) (*0.5 points*) Explain why Ratio 5 generally overstates an insurer's profitability.

The Annual Statement Actuarial Opinion instructions for the Scope paragraph requires a Schedule P reconciliation. Sue Calvin, the Appointed Actuary for R-Dan, includes a table titled "Exhibit comparing the Appointed Actuary's conclusion to carried amounts in the Annual Statement" in the Actuarial Report.

  (f) (*0.5 points*) Explain why Sue Calvin's table does or does not satisfy the Annual Statement instructions for this Schedule P reconciliation.

  (g) (*0.5 points*) Explain whether or not one can determine Sue Calvin's estimate of total IBNR by accident year from Schedule P.

10. (*4 points*) You are reviewing R-Dan General Insurance Company's Annual Statement. You note that the year-end 2017 unpaid loss amounts can be inferred from the Schedule P – Parts 2 and 3 (Summary) loss triangles. However, the inferred unpaid loss amounts from the Schedule P loss triangles do not reconcile to the unpaid loss amounts for the current year as shown on page 3 (Liabilities, Surplus and Other Funds).

    (a)   (*0.5 points*) Explain why these two amounts should not reconcile without any adjustments.

    (b)   (*3.5 points*) Provide a reconciliation of the two amounts making any necessary adjustments.

11. (*6 points*) Management of R-Dan General Insurance Company (R-Dan) is concerned that the company's statutory surplus is at risk. They are considering the use of proportional reinsurance on the homeowners multiple peril line of business in 2018. The proposed reinsurance would be in effect for risks attaching in 2018 and apply to premiums and losses, including all defense and cost containment (DCC) expenses, net of any reinsurance under the current non-proportional reinsurance program. R-Dan management is targeting a 5% increase in statutory surplus for year-end 2018 from the use of proportional reinsurance.

You have the following information for R-Dan's homeowners multiple peril line of business in 2018:

- R-Dan's 2018 expected loss ratio (ELR), including DCC, for homeowners multiple peril business is selected to be 75% for the proposed reinsurance.
- Policies are written evenly through the year.
- Projected written premiums and policyholders' surplus are as stated in R-Dan's business plan that was submitted for the rating agency review.

Droid Re, a fully authorized reinsurer not affiliated with R-Dan, has quoted the following terms for this proposed reinsurance applying to new and renewal policies written in 2018:

Type	Quota-share
Cession %	To be determined by R-Dan, not to exceed 60%
Commission	20%
Class	Homeowners multiple peril

Assume that changes to investment income from the use of this proportional reinsurance are not material.

(a)   (*1.5 points*) Demonstrate that R-Dan's selection of 75% as the ELR for the proposed reinsurance is reasonable based upon Annual Statement data.

(b)   (*2 points*) Determine the cession percentage required from this proposed reinsurance to meet R-Dan management's target with respect to statutory surplus.

(c)   (*1.5 points*) 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).

(d)   (*1 point*) 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).

12. (*3 points*) Annual Statement Schedule F Part 9 provides a restatement of the balance sheet. R-Dan General Insurance Company's (R-Dan's) Schedule F Part 9 shows a restatement of unearned premiums in the amount of 1,800,000 and losses and loss adjustment expenses in the amount of 27,200,000.

    (a)   (*1 point*) 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.

R-Dan's balance sheet shows 1,000,000 of invested assets as nonadmitted.

    (b)   (*1 point*) Provide a possible reason as to why these assets were classified as nonadmitted.

R-Dan's balance sheet shows 1,600,000 of the net deferred tax asset as nonadmitted.

    (c)   (*1 point*) Provide a possible reason as to why a portion of the net deferred tax asset was classified as nonadmitted.

END OF EXAMINATION
Morning Session

USE THIS PAGE FOR YOUR SCRATCH WORK