

Exam 6C



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Exam 6-Canada

Regulation and Financial Reporting (Nation Specific)

October 24, 2017

4 HOURS

INSTRUCTIONS TO CANDIDATES

1. This 68.75 point examination consists of 30 problem and essay questions.
2. For the problem and essay questions, the number of points for each full question and part of a question is indicated at the beginning of the question or part. Answer these questions on the lined sheets provided in your Examination Envelope. Use dark pencil or ink. Do not use multiple colors or correction fluid/tape.
 - Write your Candidate ID number and the examination number, 6C, at the top of each answer sheet. For your Candidate ID number, four boxes are provided corresponding to one box for each digit in your Candidate ID number. If your Candidate ID number is fewer than 4 digits, begin in the first box and do not include leading zeroes. Your name, or any other identifying mark, must not appear.
 - Do not answer more than one question on a single sheet of paper. Write only on the front lined side of the paper – **DO NOT WRITE ON THE BACK OF THE PAPER**. Be careful to give the number of the question you are answering on each sheet. If your response cannot be confined to one page, please use additional sheets of paper as necessary. Clearly mark the question number on each page of the response in addition to using a label such as “Page 1 of 2” on the first sheet of paper and then “Page 2 of 2” on the second sheet of paper.
 - The answer should be concise and confined to the question as posed. When a specified number of items are requested, do not offer more items than requested. For example, if you are requested to provide three items, only the first three responses will be graded.
 - In order to receive full credit or to maximize partial credit on mathematical and computational questions, you must clearly outline your approach in either verbal or mathematical form, showing calculations where necessary. Also, you must clearly specify any additional assumptions you have made to answer the question.

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3. Do all problems until you reach the last page of the examination where "END OF EXAMINATION" is marked.

All questions should be answered according to the Canadian statutory accounting practices and principles, unless specifically instructed otherwise. SAP refers to Statutory Accounting Principles, and GAAP refers to Generally Accepted Accounting Principles.

4. Prior to the start of the exam you will have a **fifteen-minute reading period** in which you can silently read the questions and check the exam booklet for missing or defective pages. A chart indicating the point value for each question is attached to the back of the examination. Writing will NOT be permitted during this time and you will not be permitted to hold pens or pencils. You will also not be allowed to use calculators. The supervisor has additional exams for those candidates who have defective exam booklets.
5. Your Examination Envelope is pre-labeled with your Candidate ID number, name, exam number and test center. Do not remove this label. Keep a record of your Candidate ID number for future inquiries regarding this exam.
6. Candidates must remain in the examination center until two hours after the start of the examination. The examination starts after the reading period is complete. You may leave the examination room to use the restroom with permission from the supervisor. To avoid excessive noise during the end of the examination, candidates may not leave the exam room during the last fifteen minutes of the examination.
7. At the end of the examination, place all answer sheets in the Examination Envelope. Please insert your answer sheets in your envelope in question number order. Insert a numbered page for each question, even if you have not attempted to answer that question. Nothing written in the examination booklet will be graded. Only the answer sheets will be graded. Also place any included reference materials in the Examination Envelope. **BEFORE YOU TURN THE EXAMINATION ENVELOPE IN TO THE SUPERVISOR, BE SURE TO SIGN IT IN THE SPACE PROVIDED ABOVE THE CUT-OUT WINDOW.**
8. If you have brought a self-addressed, stamped envelope, you may put the examination booklet and scrap paper inside and submit it separately to the supervisor. It will be mailed to you. Do not put the self-addressed stamped envelope inside the Examination Envelope. Interoffice mail is not acceptable.

If you do not have a self-addressed, stamped envelope, please place the examination booklet in the Examination Envelope and seal the envelope. You may not take it with you. Do not put scrap paper in the Examination Envelope. The supervisor will collect your scrap paper.

Candidates may obtain a copy of the examination from the CAS Web Site.

All extra answer sheets, scrap paper, etc. must be returned to the supervisor for disposal.
9. Candidates must not give or receive assistance of any kind during the examination. Any cheating, any attempt to cheat, assisting others to cheat, or participating therein, or other improper conduct will result in the Casualty Actuarial Society and the Canadian Institute of Actuaries disqualifying the candidate's paper, and such other disciplinary action as may be deemed appropriate within the guidelines of the CAS Policy on Examination Discipline.
10. The exam survey is available on the CAS Web Site in the "Admissions/Exams" section. Please submit your survey by November 7, 2017.

END OF INSTRUCTIONS

EXAM 6 – CANADA, FALL 2017

1. (2 points)

a. (0.75 point)

Identify three matters over which the federal parliament has exclusive legislative authority.

b. (0.75 point)

Identify three matters over which the provincial legislature has exclusive legislative authority.

c. (0.5 point)

Describe two ways in which an insurance company can operate in more than one province.

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EXAM 6 – CANADA, FALL 2017

2. (1.5 points)

A driver lives in Alberta and occasionally provides transportation services to others through a transportation network using the driver's personal automobile. The transportation network company is insured under an S.P.F. No. 9 policy. Identify and briefly explain whether the transportation network insurer will respond to a claim in the following situations.

a. (0.5 point)

The driver uses the car to go grocery shopping for himself and is not logged onto the transportation network.

b. (0.5 point)

The driver is logged onto the transportation network for the purpose of providing transportation services but has not accepted a ride request.

c. (0.5 point)

The driver is logged onto the transportation network for the purpose of providing transportation services and is en route to pick up his passenger.

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EXAM 6 – CANADA, FALL 2017

3. (2.5 points)

A British Columbia property and casualty insurance company is considering reviewing its factors for the credit-based insurance scores for homeowners insurance. The company believes that recent improvements in economic conditions reduce the need to segregate by credit-based insurance scores because “most policyholders are now in a good economic situation”. The company plans to review the consent to use credit information for rating that it has obtained from all policyholders.

a. (1 point)

Fully discuss the appropriateness of using credit-based insurance scores for risk differentiation.

b. (1 point)

Fully discuss the need to review the credit score consent forms for all policyholders, citing an outcome from a landmark decision.

c. (0.5 point)

Discuss the need to review credit-based insurance scores after a change in economic conditions.

EXAM 6 – CANADA, FALL 2017

4. (2 points)

In each of the following scenarios, explain a likely outcome for the insurance company and cite any relevant precedents used to support the conclusion drawn.

a. (1 point)

In Ontario, Driver A was injured in a motor vehicle accident due to Driver B's negligence. Driver A has settled with Driver B for all of the damages, explicitly including medical expense. Driver A then brought action against his own insurer to recover his medical expenses, citing the following clause in the standard personal automobile insurance policy:

The Insurer agrees to pay for each person who sustains Bodily Injury caused by an accident while driving, all reasonable expenses incurred as a result of such injury, for necessary medical, surgical, hospital services.

b. (1 point)

An insured has been sued for causing damages as a result of sexual assault. The insurance company is denying any duty to defend, as intentional act is excluded from the insured's personal liability coverage. The possibility of action in negligence by the insured has also been ruled out. The insured in turn files a lawsuit against the insurance company, arguing the insurance company has a duty to defend.

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EXAM 6 – CANADA, FALL 2017

5. (1.25 points)

In a series of decisions in 1978, commonly referred to as the Trilogy, the Supreme Court of Canada established a cap on non-pecuniary damages.

a. (0.75 point)

Briefly describe three justifications presented by the Supreme Court for establishing the cap.

b. (0.5 point)

Identify two types of tort losses for which the cap on non-pecuniary damages does not apply.

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EXAM 6 – CANADA, FALL 2017

6. (1 point)

a. (0.5 point)

Describe the legal doctrine joint and several liability.

b. (0.5 point)

Briefly describe one advantage and one disadvantage of this doctrine.

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EXAM 6 – CANADA, FALL 2017

7. (1.75 points)

A number of jurisdictions have a combined injury and liability automobile insurance system.

a. (0.75 point)

Briefly describe the three types of combined systems.

b. (0.5 point)

Briefly describe two advantages of combined systems over pure tort or pure no-fault systems.

c. (0.5 point)

Explain which type of threshold definition has been most successful in North America to control claim costs.

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EXAM 6 – CANADA, FALL 2017

8. (1.25 points)

AgriInsurance requires an actuarial opinion on the self-sustainability for all provincial production insurance programs.

a. (0.5 point)

Describe the objective of this certification.

b. (0.75 point)

Provide one similarity and two differences between the assessment of self-sustainability and Dynamic Capital Adequacy Testing (DCAT) analysis.

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EXAM 6 – CANADA, FALL 2017

9. (2.25 points)

a. (0.75 point)

Briefly describe the three key reasons that residential coverage for overland flooding has historically not been available in Canada.

b. (1 point)

Identify four preconditions that are essential to establishing a strong flood risk management culture.

c. (0.5 point)

Canadian insurers have recently introduced flood coverage endorsements to homeowners' policies. Describe the Canadian government's role in ensuring flood coverage continues to be offered in the future.

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EXAM 6 – CANADA, FALL 2017

10. (3 points)

a. (0.5 point)

Briefly describe two methods of loss subsidization that a government insurer can use to fill insurance needs unmet by private insurance.

b. (1 point)

Identify and briefly describe two reasons for government participation in insurance, other than to fill insurance needs unmet by private insurance.

c. (0.5 point)

For each of the reasons provided in part b. above, briefly describe one situation in which the reasoning for government participation in insurance may not be justified.

d. (1 point)

Contrast insurance and social welfare programs with respect to:

- i. Source of funding
- ii. Trigger of payment

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EXAM 6 – CANADA, FALL 2017

11. (2.25 points)

a. (1.25 points)

Identify the five conditions that must be met by a provincial health care program to be eligible for unreduced federal funding, as outlined in the Canada Health Act.

b. (1 point)

For each change below, identify which, if any, of the conditions from part a. above are not met.

- i. Introducing a per-visit dollar deductible
- ii. Privatizing the program
- iii. Removing extended health care services
- iv. Reverting coverage for out-of-province residents to their home province

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EXAM 6 – CANADA, FALL 2017

12. (2.5 points)

a. (0.25 point)

Briefly describe a reason for the establishment of the Property and Casualty Insurance Compensation Corporation (PACICC).

b. (1.25 points)

In the event of an involuntary exit, briefly describe:

- i. Three responsibilities of PACICC.
- ii. The role of claimants of the insolvent insurer.
- iii. The role of solvent member insurance companies.

c. (1 point)

Briefly describe four company characteristics that play a role in most insurer insolvencies.

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EXAM 6 – CANADA, FALL 2017

13. (1.5 points)

Describe three differences between the Facility Association Residual Market and the Risk Sharing Pool.

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EXAM 6 – CANADA, FALL 2017

14. (4.25 points)

The following information is available for a property and casualty insurance company as at December 31, 2016. All amounts are in thousands of dollars (\$000s).

Cumulative Gross Paid Losses			
Accident Year	Months of Development		
	12	24	36
2014	40,000	60,000	75,000
2015	35,000	50,000	
2016	39,000		

Total Gross Unpaid Claims			
Accident Year	Months of Development		
	12	24	36
2014	39,000	20,000	0
2015	40,000	16,000	
2016	41,000		

The cumulative accident year payment pattern is as follows:

Age (months)	Cumulative Percentage Paid
12	50%
24	75%
36	100%

	2016	2015
Gross unearned premium	90,000	80,000
Gross premium written	100,000	n/a
Discount rate	3%	3%
Margin for adverse deviations (MfAD) for claims development	10%	10%
MfAD for recovery from reinsurance ceded	1%	1%
MfAD for investment return rates	0.25%	0.25%
Net claim liabilities	?	47,876
Premium taxes, net commissions and general expenses	15,000	15,000
Interest income from investments	100	125
Realized gains (losses) from Fair Value Option assets	200	225
Unrealized gains (loss) from Fair Value Option assets	250	275
Realized gains (losses) from Available For Sale assets	300	325
Unrealized gains (losses) from Available For Sale assets	350	375
Realized gains (losses) from Held to Maturity assets	400	425
Unrealized gains (losses) from Held to Maturity assets	450	475
Investment expenses	50	50

- Since its inception, the company has had a quota share treaty with a 25% cession rate. There is no other reinsurance.
- Assume that there are no income taxes and no premium deficiency.

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EXAM 6 – CANADA, FALL 2017

a. (3.75 points)

Calculate the company's net income and total comprehensive income for 2016.

b. (0.5 point)

Contrast the use of fair value and historical cost to value an asset.

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EXAM 6 – CANADA, FALL 2017

15. (3.25 points)

The following information is available for the valuation of premium liabilities as at December 31, 2016. All amounts are in thousands of dollars (\$000s).

Net unearned premium booked	55,000	
Gross unearned premium booked	60,000	
Expected reinsurance costs	6,000	
Net undiscounted loss ratio	98%	
Expected ULAE	2,500	
Discount rate	3%	
MfAD for claims development	10%	
MfAD for reinsurance ceded	1%	
MfAD for investment return rates	0.5%	
Gross present value of losses and ULAE	53,000	
Maintenance expense as a % of gross premium	3%	
Unearned reinsurance commissions	2,300	
Cumulative accident year payment pattern	Age (Months)	% Paid
	12	30%
	24	100%

Calculate the premium deficiency, if any.

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EXAM 6 – CANADA, FALL 2017

16. (1.25 points)

The following information is available for a property and casualty insurance company as at December 31, 2016. All amounts are in thousands of dollars (\$000s).

Cumulative Paid Losses

Accident Year	Months of Development		
	12	24	36
2014	9,000	26,000	31,000
2015	15,000	28,000	
2016	13,000		

Actuarial Present Value of Loss and ALAE

Accident Year	Months of Development		
	12	24	36
2014	31,000	13,000	8,000
2015	29,000	14,000	
2016	25,000		

The company started its operations in 2014. The annual yield was 3% in 2014, 2015 and 2016.

Calculate the total margin or deficiency for unpaid claims of prior years during calendar year 2016.

EXAM 6 – CANADA, FALL 2017

17. (3 points)

The following information is available for a property and casualty insurance company starting operations on January 1, 2017. All amounts are in thousands of dollars (\$000s).

The company considers purchasing the following aggregate excess of loss treaty to stabilize its loss experience:

- The treaty will be effective on January 1, 2017, and will expire on December 31, 2017.
- It will cover 100% of losses and LAE above 600.
- The premium is 100 and payable at start of the year.
- There is no ceding commission and no profit commission.
- For simplicity, assume there is no discounting of unpaid claims and no provisions for adverse deviations.
- The company purchases no other reinsurance.
- The investment return rate is 0%.
- The income tax rate is 0%.

The actuary forecasts three possible scenarios of underwriting results for the year.

Scenario	Incurred Losses and Adjustment Expenses	Losses Paid In 2017	Probability
A	400	100	25%
B	500	100	50%
C	800	200	25%

The actuary also forecasts the following for the company's financial statements on December 31, 2017, under Scenario C without purchasing the treaty.

Scenario C Without Reinsurance	
Written premium	1,550
Earned premium	750
Incurred losses	800
Operating expenses	200
Unpaid claims	600
Unearned premiums	700
Other liabilities	0
Surplus	1,100

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EXAM 6 – CANADA, FALL 2017

a. (0.75 point)

Briefly describe three functions of reinsurance other than stabilizing loss experience.

b. (1.5 points)

Calculate the following for Scenario C with reinsurance.

- i. Net written premium
- ii. Net earned premium
- iii. Net unearned premiums
- iv. Net incurred losses
- v. Underwriting income
- vi. Net unpaid claims

c. (0.75 point)

Assess whether this aggregate excess of loss treaty qualifies as reinsurance.

EXAM 6 – CANADA, FALL 2017

18. (3.5 points)

The following Probable Maximum Loss (PML) outputs from an earthquake model are available. All amounts are in millions of dollars.

Return period	Eastern Canada	Western Canada
100 years	400	200
250 years	600	350
500 years	1,000	600

The insurance company does not purchase reinsurance and has \$3 billion in surplus. The company has no earthquake premium reserves.

The insurer is progressively phasing in from a 420-year return period in 2014 to a 500-year return period in 2022.

a. (1.5 points)

Calculate the insurance company's earthquake reserves as at December 31, 2016.

b. (2 points)

Identify and briefly describe four considerations when evaluating PML estimates from an earthquake model.

EXAM 6 – CANADA, FALL 2017

19. (1.75 points)

The following information is available for a property and casualty insurance company as at December 31, 2016. All amounts are in thousands of dollars (\$000s).

Estimated undiscounted value of the commuted liability	4,000	
Risk free rate	2%	
Required margin	10%	
Target capital to required capital ratio	200%	
Risk cost of capital	10%	
Cumulative calendar year payment pattern	Age (Months)	% Paid
	12	50%
	24	100%

Calculate the value of the commuted liability as at December 31, 2016.

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EXAM 6 – CANADA, FALL 2017

20. (4.25 points)

The following information is available for a property and casualty insurance company as at December 31, 2016. All amounts are in thousands of dollars (\$000s).

	Capital (Margin) Required at Target
Insurance Risk Margin	
Premium liabilities	?
Unpaid claims	?
Catastrophes	500
Margin required for reinsurance ceded to unregistered reinsurers	?
Market Risk Margin	
Interest rate risk	?
Foreign exchange risk	0
Equity risk	500
Real estate risk	40
Other market risk exposures	10
Credit Risk Margin	810
Operational Risk Margin	?

Unpaid Claims Margin

Net claim liabilities	56,416
Provisions for adverse deviation (PfAD)	3,069
Average risk factor	14%
Duration	1.51

Premium Liabilities Margin

Net premium liabilities	29,000
PfAD	3,000
Average risk factor	20%
Duration	0.50

Margin Required for Unregistered Reinsurance

Unearned premiums ceded	5,000
Outstanding losses recoverable	25,000
Reinsurance receivable	800
Non-owned deposits	20,000
Letters of credit	15,000

There is only one reinsurer.

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EXAM 6 – CANADA, FALL 2017

Assets

Market value of bonds	150,000
Market value of other interest-sensitive assets	0
Duration of bonds	1.0
Risk factor	1.25%

Operational Risk Margin

	Value	Risk Factor
Direct written premium in the last 12 months	135,000	2.50%
Assumed written premiums in the last 12 months	20,000	1.75%
Increase in gross written premiums in the last 12 months	40,000	n/a
Ceded written premiums in the last 12 months	50,000	2.50%

The correlation factor between asset risk margin and insurance risk margin is 50%.

The risk factor for premium growth beyond the threshold of 20% is 2.50%.

The risk factor applied to total capital required (before the operational risk margin and diversification credit) for the calculation of the operational risk margin is 8.50%.

a. (1.75 points)

Calculate the margin for insurance risk.

b. (1 point)

Calculate the margin for market risk.

c. (0.75 point)

Calculate the margin for operational risk.

d. (0.75 point)

Calculate the insurance company's capital required at target.

EXAM 6 – CANADA, FALL 2017

21. (2.25 points)

a. (0.75 point)

Briefly describe three similarities between DCAT and the Own Risk and Solvency Assessment (ORSA).

b. (1.5 points)

Describe three differences between DCAT and ORSA.

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EXAM 6 – CANADA, FALL 2017

22. (2.5 points)

The results of the Dynamic Capital Adequacy Testing (DCAT) are summarized below for two federally-regulated property and casualty insurance companies. Assume that the selected scenarios are the most adverse ones during the DCAT forecast period for each company and that the MCT ratio listed is the worst result throughout each forecast period.

Company A	Base Scenario	Adverse Scenario 1	Adverse Scenario 2	Adverse Scenario 3
MCT Ratio	145%	115%	125%	135%
Equity (\$000s)	200,000	150,000	165,000	170,000

Company B	Base Scenario	Adverse Scenario 1	Adverse Scenario 2	Adverse Scenario 3
MCT Ratio	165%	145%	95%	125%
Equity (\$000s)	250,000	200,000	120,000	160,000

a. (1 point)

Assess whether each company's financial condition is satisfactory.

b. (0.75 point)

Define social inflation and briefly describe its effect on the company.

c. (0.75 point)

Identify one example of off-balance sheet risk, one ripple effect and one management action that may be considered under the Off-Balance-Sheet Risk scenario.

EXAM 6 – CANADA, FALL 2017

23. (1.5 points)

a. (0.5 point)

Define a plausible adverse scenario in the context of DCAT.

b. (1 point)

The Appointed Actuary (AA) performs a plausible premium volume adverse scenario in the DCAT. Briefly describe:

- i. An event leading to the scenario
- ii. One significant adverse assumption
- iii. One ripple effect
- iv. One corrective management action

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EXAM 6 – CANADA, FALL 2017

24. (2 points)

Identify and briefly describe four purposes of a stress testing program of an insurance company.

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EXAM 6 – CANADA, FALL 2017

25. (4 points)

The following information is available from a property and casualty insurance company's Annual Return as at December 31, 2016. All amounts are in thousands of dollars (\$000s).

Total assets	112,000
Total liabilities	90,000
Gross premiums written	70,400
Net premiums written	67,900
Decrease (increase) in net unearned premiums	(2,000)
Net incurred claims and operating expenses	63,500
Investment operations – income	1,500
Investment operations – realized gains (losses)	1,000
Investment operations – expenses	400
Share of net income from subsidiaries	1,800

Other information:

- The company has never had any premium deficiencies, other comprehensive income, or service charges nor any other adjustments in determining its total underwriting revenue.
- 70% of the company's investment income and expenses was attributable to underwriting-related activities.
- The company's return on assets after tax was 2.73%.
- The company's adjusted investment yield (including gains/losses) was 1.93%.

a. (1.5 points)

Calculate the company's return on equity in 2016.

b. (1.5 points)

Calculate three metrics other than the ones mentioned above that can be used to evaluate the company's financial strength.

c. (1 point)

Given your answers to parts a. and b. above, comment on the financial strength of the company.

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EXAM 6 – CANADA, FALL 2017

26. (1.5 points)

A.M. Best analyzed two property and casualty insurance companies for their stress-tested Best's Capital Adequacy Ratio (BCAR) score, and determined the following tolerance levels:

- Company A (rated A- for balance sheet strength): 30 points
- Company B (rated A- for balance sheet strength): 0 point

Additionally, the following information is available for the two companies:

Company	Company profile	Primary catastrophic exposure	Average combined ratio for the last ten years	Standard deviation of combined ratio for the last ten years
A	Subsidiary of an international insurance group	Earthquake	95%	9%
B	Domestic mutual company	Tornado	91%	15%

Describe three factors that could explain the lower tolerance level for Company B.

EXAM 6 – CANADA, FALL 2017

27. (3 points)

Given the following information, describe four ways in which the AA likely did not follow the appropriate standards of practice or educational guidance and briefly describe what the appropriate action would have been in each instance.

An actuary with ten years of reserving experience is newly hired at a Canadian property and casualty insurance company as its AA to perform the year-end valuation of policy liabilities.

First, the AA determines the unpaid claims, and then deterministically studies the risk of the insurance company's three lines of business. All three reflect the standard risk for policies of their type, and given the company processes and industry situation, the AA selects the following claims development MfADs:

- Personal Property: 2%
- Commercial Property: 3%
- Liability: 12%

In the review of the premium liabilities, the AA selects different claim development MfADs than the ones above, opting to increase each by 1%. For all policy liabilities, the AA selects a recovery from reinsurance ceded MfAD of 1% and multiplies it by the ceded premiums to determine the provision. Finally, the AA selects an investment return MfAD of 150 basis points considering timing risk, regulatory risk, and credit risk. The investment return PfAD is determined by discounting each line a second time using the discount rate net of this margin then taking the difference between these discounted liabilities and the original present value of claim liabilities using the original discount rate.

The AA calculates the actuarial claim liabilities as follows:

- Gross actuarial claim liabilities = gross present value claim liabilities + gross PfAD for claims development + gross PfAD for investment return
- Ceded actuarial claim liabilities = ceded discounted claim liabilities + ceded PfAD for claims development + ceded PfAD for recovery from reinsurance ceded + ceded PfAD for investment return
- Net actuarial claim liabilities = gross actuarial claim liabilities – ceded actuarial claim liabilities

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EXAM 6 – CANADA, FALL 2017

During the review of the reinsurance coverage, the AA discovers a coverage gap on the liability line of business that may threaten the insurance company's financial condition. After fully investigating the issue, the AA notifies senior management of these findings and recommends adjusting the reinsurance coverage in a specific way to eliminate the issue.

Finally, when preparing the AA report, the actuary includes all standard disclosures. This section explains that the new appointment was on February 25, 2016, exactly one week after the resignation of the previous AA. It details the full list of the AA's qualifications and confirms contact with the previous AA regarding their reason for resigning.

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EXAM 6 – CANADA, FALL 2017

28. (1.5 points)

The AA of a company is valuing the policy liabilities as at December 31, 2016. The report date is February 22, 2017.

For each of the following scenarios, justify the actions that the AA should take.

a. (0.75 point)

There was a British Columbia snow storm which occurred on February 5, 2017, and the company has material exposure in this province.

b. (0.75 point)

The AA received notice on February 15, 2017, that some previously reported losses as of December 31, 2016, experienced a large change in value. The change in value is in excess of the standard of materiality, and it was recorded in the insurance claims database in mid-January 2017.

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EXAM 6 – CANADA, FALL 2017

29. (2.25 points)

a. (0.75 point)

Identify three reasons why an actuary would cease to hold the position of AA.

b. (0.5 point)

Briefly discuss whether it is possible for a chief financial officer to hold the position of AA of a company.

c. (1 point)

Describe the AA's duty to report to

- i. The directors of the insurance company
- ii. The officers of the insurance company

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EXAM 6 – CANADA, FALL 2017

30. (2.25 points)

a. (0.5 point)

Describe the concept of materiality.

b. (0.75 point)

For each of the following, identify a financial metric on which the materiality level could be based:

- i. Regulatory or solvency related work
- ii. Appraisal
- iii. General purpose financial statement

c. (1 point)

Identify four characteristics of an insurance company that may affect the materiality level.

Exam 6C

Regulation and Financial Reporting

POINT VALUE OF QUESTIONS

QUESTION	VALUE OF QUESTION	SUB-PART OF QUESTION						
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	2.00	0.75	0.75	0.50				
2	1.50	0.50	0.50	0.50				
3	2.50	1.00	1.00	0.50				
4	2.00	1.00	1.00					
5	1.25	0.75	0.50					
6	1.00	0.50	0.50					
7	1.75	0.75	0.50	0.50				
8	1.25	0.50	0.75					
9	2.25	0.75	1.00	0.50				
10	3.00	0.50	1.00	0.50	1.00			
11	2.25	1.25	1.00					
12	2.50	0.25	1.25	1.00				
13	1.50	1.50						
14	4.25	3.75	0.50					
15	3.25	3.25						
16	1.25	1.25						
17	3.00	0.75	1.50	0.75				
18	3.50	1.50	2.00					
19	1.75	1.75						
20	4.25	1.75	1.00	0.75	0.75			
21	2.25	0.75	1.50					
22	2.50	1.00	0.75	0.75				
23	1.50	0.50	1.00					
24	2.00	2.00						
25	4.00	1.50	1.50	1.00				
26	1.50	1.50						
27	3.00	3.00						
28	1.50	0.75	0.75					
29	2.25	0.75	0.50	1.00				
30	2.25	0.50	0.75	1.00				
31	0.00							
32	0.00							
33	0.00							
34	0.00							
35	0.00							
36	0.00							
37	0.00							
38	0.00							
39	0.00							
40	0.00							
41	0.00							
42	0.00							
43	0.00							
44	0.00							
45	0.00							
TOTAL	68.75							

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

GENERAL COMMENTS:

- Candidates should note that the instructions to the exam explicitly say to show all work; graders expect to see enough support on the candidate's answer sheet to follow the calculations performed. While the graders made every attempt to follow calculations that were not well-documented, lack of documentation may result in the deduction of points where the calculations cannot be followed or are not sufficiently supported.
- Candidates should justify all selections when prompted to do so. For example, if the candidate selects an all year average and the question prompts a justification of all selections, a brief explanation should be provided for the reasoning behind this selection. Candidates should note that a restatement of a numerical selection in words is not a justification.
- Incorrect responses in one part of a question did not preclude candidates from receiving credit for correct work on subsequent parts of the question that depended upon that response.
- Candidates should try to be cognizant of the way an exam question is worded. They must look for key words such as "briefly" or "fully" within the problem. We refer candidates to the Future Fellows article from December 2009 entitled "The Importance of Adverbs" for additional information on this topic.
- Some candidates provided lengthy responses to a "briefly describe" question, which does not provide extra credit and only takes up additional time during the exam.
- Candidates should note that the sample answers provided in the examiner's report are not an exhaustive representation of all responses given credit during grading, but rather the most common correct responses.
- In cases where a given number of items were requested (e.g., "three reasons" or "two scenarios"), the examiner's report often provides more sample answers than the requested number. The additional responses are provided for educational value, and would not have resulted in any additional credit for candidates who provided more than the requested number of responses. Candidates are reminded that, per the instructions to the exam, when a specific number of items is requested, only the items adding up to that number will be graded (i.e., if two items are requested and three are provided, only the first two are graded).
- It should be noted that all exam questions have been written and graded based on information included in materials that have been directly referenced in the official syllabus, which is located on the CAS website. The CAS takes no responsibility for the content of supplementary study materials and/or manuals produced by outside corporations and/or individuals which are not directly referenced in the official syllabus.

EXAM STATISTICS:

- Number of Candidates: 119
- Available Points: 68.75
- Passing Score: 49.50
- Number of Passing Candidates: 57
- Raw Pass Ratio: 47.90%
- Effective Pass Ratio: 54.81%

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 1	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE(S): A1
SAMPLE ANSWERS	
Part a: 0.75 point	
<p>Any three of the following:</p> <ul style="list-style-type: none"> • trade & commerce • criminal law • alien & naturalization • taxation • banking • bankruptcy & solvency • peace in the land 	
Part b: 0.75 point	
<p>Any three of the following:</p> <ul style="list-style-type: none"> • licensing • compulsory coverage • policyholder claim dispute • premium payment • incontestability • designation of beneficiaries • operations of business within province/regulation • healthcare medical services • education • incorporation of company with provincial object • property and civil rights • all matters of mere local or private nature • rate regulatory • claim handling process • disclose • content of policy • insurable interest • taking effect • reinstatement • beneficiaries • dealing with contract • unfair practices 	
Part c: 0.5 point	
<u>Sample 1</u>	
<ul style="list-style-type: none"> - Incorporate in one province, and obtain license from each province intended to operate in - Branch of foreign company to obtain federal licensing and license from each province intended to operate in 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Sample 2

- A federally regulated insurer
- A provincial regulated insurer registered with another province

EXAMINER'S REPORT

Part a

Candidates were expected to identify matters over which the federal government has exclusive legislative authority.

Common errors include:

- Providing an answer that is vague or too brief such as "legislation," "FRFI," "law," or "PC1."
- Listing elements that the federal government does have legislative authority but the authority is not exclusive, such as insurance regulations.

Part b

Candidates were expected to identify matters over which the provincial governments have exclusive legislative authority. Credit was also provided for answers related to insurance contract regulation as insurance contracts are exclusively provincially-regulated.

Common errors include:

- Short one word generic answers that were too vague or too brief.

Part c

Candidates were expected to describe two incorporation situations: 1) federal incorporation and 2) provincial incorporation with permission to do business in other provinces.

Common errors include:

- Mixing up licensing and incorporation.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 2	
TOTAL POINT VALUE: 1.5	LEARNING OBJECTIVE(S): A2
SAMPLE ANSWERS	
Part a: 0.5 point	
<u>Sample answer</u> No coverage: This is period 0 in the TNC framework.	
Part b: 0.5 point	
<u>Sample answer</u> Coverage: This is period 1 of the TNC framework. Primary insurer can also provide coverage.	
Part c: 0.5 point	
<u>Sample answer</u> Coverage: This is period 2 of the TNC framework.	
EXAMINER'S REPORT	
<p>Candidates were expected to correctly identify the situation described and associate it with the appropriate coverage period. They were also expected to describe whether or not coverage from the transportation network insurer would be provided in the period and under which circumstances.</p> <p>Common errors include:</p> <ul style="list-style-type: none">• Confusing Period 2 and Period 1 for part c• Not listing the condition that would make the transportation network insurer respond in part b.	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 3	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE(S): A2, A3
SAMPLE ANSWERS	
Part a: 1 point	
<u>Sample 1</u> Credit score has been shown to be a predictor of risk level and insurers are saying that they are able to write more risks with the use of credit-based insurance score. Even if the credit scores at the aggregate level are on the rise and high for most policyholders, the relative risks difference between two credit score might still be there, as would be revealed by differential analysis. As such, appropriate to use credit-based insurance score.	
<u>Sample 2</u> It is appropriate as it helps segment risk based on similar expected loss costs. This will not lead to overall increase in premium but rather a better distribution among risks and thus, avoid subsidization between low and high risks.	
<u>Sample 3</u> Credit-based is statistically significant to the expected losses, it is easy to obtain and verify and also will not be manipulated by insured. Therefore, it's appropriate to use for risk differentiation.	
<u>Sample 4</u> It is appropriate as it has been proven to be a good predictor of losses and it is generally accepted by public. However, insurer must have an informed and clear consent from their insureds and credit-based insurance scores must be approved by regulators.	
<u>Sample 5</u> It could be seen as an invasion of privacy at some extent. Credit-based insurance scores also tend to be discriminatory to certain segments of the population (low-income, young, ethnic groups). Moreover, the causality could be hard to see from an insured point of view. In this sense, using credit scores for risk differentiation becomes an ethical issue.	
Part b: 1 point	
<u>Sample 1</u> BC Credit case has shown the importance for companies to obtain clear and explicit consent form from their policyholders. Even though it is already in use, it would be good to review all consent forms to ensure they are updated with the intended use of credit and that the consent is clear and explicit.	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Sample 2

If the company finds that its consent form is deficient, it will likely be required to follow the result of the PIPEDA report. It will need to update its current consent form, inform all current policyholders of the new consent form and obtain consent. The insurer will not have to obtain consent from all historical policyholders, as this would put strain on the company and broker network.

Sample 3

There is no need to review the consent as long as consent were obtained in accordance with PIPEDA and IBC code of conduct. From Hughes vs Economical case, consent must explain explicitly how the credit score will be used.

Part c: 0.5 point

Sample 1

Just like any rating variable, a change in economic condition that will cause distributional shift in credit scores will be caught by the pricing actuary who will adjust accordingly the rates. Credit score is not used to set overall premium, just to redistribute it fairly according to expected losses. The overall premium will not be impacted.

Sample 2

This is necessary because it is a premium trend, as mix of business have changed, it would be good to remain competitive and analyze the loss cost relationship with the new distribution of credit-based score portfolio, in order to not be adversely selected.

Sample 3

Since the distribution of credit score may have change, we need to review relativities to ensure there are still in line with expected losses. If the relation between the different credit score groups have changed, then the relativities need to be reviewed.

Sample 4

Will need to review because:

- 1- Average score will be different = need to offset
- 2- Potentially greater differentiation of credit score between policyholder. Need to re-evaluate the credit score algorithm and factors to see if still make sense.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT
<p>Candidates were expected to discuss on the usage of credit-based insurance scores and landmark decision related to it.</p>
<p>Part a</p> <p>Candidates were expected to discuss the appropriateness of using credit scoring for ratemaking.</p> <p>A common error included :</p> <ul style="list-style-type: none">• Not providing enough detail for full marks, for example:<ul style="list-style-type: none">○ Credit scores identifies between risks and effectively estimates loss cost differences
<p>Part b</p> <p>Candidates were expected to discuss the need to review credit score consent forms and support their argument through citation of an outcome from a landmark case (Hughes v. Economical, PIPEDA, or BC Credit Case).</p> <p>A common error included :</p> <ul style="list-style-type: none">• Explaining the landmark case without answering to the question. To obtain full credit, candidates should explain the link between this case and the landmark case. For example, the following would receive partial credit:<ul style="list-style-type: none">○ BC Credit Case, a couple brought a suit against an insurer stating that their credit score was used to determine their premium without consent. Insurer claimed consent was given using standard form. Court ruled that standard form was not sufficient and consent must be informed; must review all policy consent forms retroactively. Supreme Court overturned this; reviewing all forms would be too demanding, but consent forms must be reviewed going forward and informed consent given. <p>If a sentence such as “Thus, it is needed to review the consent forms for all policyholders to ensure that the consent is clear and explicit” were added, this would then have received full credit.</p>
<p>Part c</p> <p>The candidates were expected to discuss the need to review credit-based insurance scores following a change in economic conditions.</p> <p>Common errors include:</p> <ul style="list-style-type: none">• Explaining the impact on the overall premium without answering to the question, for example:<ul style="list-style-type: none">○ It should be reviewed after a change in economic conditions so changes can be off-balanced to maintain your average target level of premium.• Explaining the impact on credit scores instead of credit-based insurance scores, for example:

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- After a change in economic conditions, policyholders may be affected by the economy as well as their credit scores. Thus, we need to review credit score to keep information accurate and up-to-date.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 4	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE(S): A3
SAMPLE ANSWERS	
Part a: 1 point	
<u>Sample 1</u>	
<ul style="list-style-type: none">- Glynn vs. Scottish Union- An insurance contract is assumed to be a contract of indemnity unless specifically stated otherwise- To recover from a contract of indemnity the insured must prove that<ol style="list-style-type: none">1. A covered event occurred2. Insured sustained a loss from the event- Since A already got paid for his damages by B, he can't obtain double recovery, because he doesn't satisfy #2	
<u>Sample 2</u>	
<ul style="list-style-type: none">- This is Glynn vs. Scottish Union case- The insurer would have to pay for the expenses, but can subrogate from Driver A on settlement collected from Driver B.- Section B is considered a contract of indemnity because payment is only triggered when claimant prove event of loss and amount of loss. Since subrogation stems from indemnification, insurer would be able to subrogate in this case	
<u>Sample 3</u>	
<ul style="list-style-type: none">- Somersall vs. Scottish York- Driver A is unlikely to get compensated from its own insurer- Insured shall not be double compensated, as that violates the principle of indemnity- Unless stated specifically in the contract as intention, contract of insurance is contract of indemnity	
Part b: 1 point	
<u>Sample 1</u>	
<ul style="list-style-type: none">- Case: Sansalone vs. Wawanesa- If the risk of injury is inherent in the insured's malicious acts such that the risk of injury is a natural and probable consequence of the act, then the intention to commit the act is the intention to cause the injury- Thus coverage doesn't apply and insurer has no obligation to defend	
<u>Sample 2</u>	
<ul style="list-style-type: none">- This is duty to defend and the same ruling as Nichols vs. American Home Assurance should apply- The duty to defend is not separate from duty to cover, because there would be too many disadvantages with a broad duty to defend. Therefore, since intentional act is excluded, duty to defend for intentional act should also be excluded.	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT

Candidates are expected display an understanding of specific landmark court decisions.

Part a

Candidates were expected to understand the definition of contract of indemnity and the concept of principle of subrogation, as well as understand how insureds are prevented from profiting from a loss event.

Common mistakes include:

- Using the case of Somersall vs. Scottish York as a precedence to claim that the insurer will have to pay for the medical expenses. This is incorrect since the insured in the Somersall case was not fully compensated. The insurer's right of subrogation arises after the insured has been fully indemnified.
- Incorrect or missing precedence reference
- Mentioning avoidance of double recovery but insufficiently supporting this answer by not referencing the principle of subrogation or contract of indemnity

Part b

Candidates were expected to understand that intention to commit the act is the intention to cause the injury when injury is the natural and probable consequence of an intentional act.

Common mistakes include:

- Incorrect or missing precedence reference
- No mention of intention to commit the act or intention to cause injury

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 5	
TOTAL POINT VALUE: 1.25	LEARNING OBJECTIVE(S): A3
SAMPLE ANSWERS	
Part a: 0.75 point	
Any three of the following: <ul style="list-style-type: none">• The claim of a severely injured person for damages for non-pecuniary loss is virtually limitless. The fact that there is no objective yardstick for measuring such loss leaves this area open to inconsistent and widely extravagant awards• Damages for non-pecuniary losses are not really “compensatory” as no money can provide true restitution. Accordingly, such damages should be viewed as simply providing additional money to make life more endurable• Under the law, the plaintiff will be fully compensated for future loss of income and future care costs which are arguably more important for ensuring that the injured person is well cared for in the future• Exorbitant awards for general damages can lead to an excessive social burden (i.e. unaffordable increases in insurance and social costs)	
Part b: 0.5 point	
<ul style="list-style-type: none">• Sexual Assault• Defamation	
EXAMINER'S REPORT	
Candidates were expected to understand the reasons a cap on non-pecuniary damages was established by the Supreme Court of Canada and be able to identify cases where the cap was ruled not to apply.	
Part a	
Candidates were expected to provide three reasons why the Supreme Court of Canada established a cap on non-pecuniary damages. A common mistake was: <ul style="list-style-type: none">• Listing a reason that was a restatement of another reason	
Part b	
Candidates were expected to briefly describe two cases where the cap was ruled not to apply. Common mistakes include: <ul style="list-style-type: none">• Listing only one instance• Listing an instance where the cap would apply (e.g., negligence)	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 6	
TOTAL POINT VALUE: 1	LEARNING OBJECTIVE(S): A4
SAMPLE ANSWERS	
Part a: 0.5 point	
<u>Sample 1</u>	
<ul style="list-style-type: none">Permits the plaintiff to recover damages from multiple defendants collectively, or from each defendant individually, even if the party is only partially at-fault for the loss	
<u>Sample 2</u>	
<ul style="list-style-type: none">Plaintiff can recover compensation from damages from one of multiple defendants, or from all of them, regardless of their level of liability	
Part b: 0.5 point	
Any one of the following advantages:	
<ul style="list-style-type: none">Protects the right of plaintiff's to be fully compensatedImprove the efficiency of the legal system as it promotes settlement by the defendants to avoid more trials	
Any one of the following disadvantages:	
<ul style="list-style-type: none">Produces inequitable distribution of liability, which is neither fair nor rationalSomeone who is only 1% liable could be on the hook for 100% of the lossesLeads to deep pocket syndrome	
EXAMINER'S REPORT	
Candidates were expected to understand the doctrine of joint and several liability and its advantages and disadvantages.	
Part a	
Candidates were expected to demonstrate understanding of the joint and several liability.	
A common mistake was:	
<ul style="list-style-type: none">Only mentioning seeking damage from an individual defendant, but not multiple defendants collectively, or vice versa.	
Part b	
Candidates were expected to briefly describe an advantage and a disadvantage of the doctrine.	
Common mistakes include:	
<ul style="list-style-type: none">Not providing both an advantage and a disadvantageFor the disadvantage, stating "not fair" without providing any supporting arguments	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 7	
TOTAL POINT VALUE: 1.75	LEARNING OBJECTIVE(S): A4, B3
SAMPLE ANSWERS	
Part a: 0.75 point	
<ul style="list-style-type: none">• Choice: policyholder chooses between tort policy and injury policy• Bulk of compensation under tort system with limited add-on injury benefits provided regardless of fault• Threshold: claims are under injury system unless threshold is met which gives policyholder the right to sue	
Part b: 0.5 point	
<p><u>Any two from the following:</u></p> <ul style="list-style-type: none">• It is a compromise. It allows the introduction of the injury system in a more fair way by retaining the access to the judicial system• Provides a compromise since less seriously injured victims will be compensated quickly while severely injured retain right to sue• Decreases legal transaction costs since fewer cases will go to court• More fair: ensures that severely injured are properly compensated• More severely injured person can have more highly individualized compensation than under the injury system• Provides compensation to at-fault injured who committed minor errors• Minimize or remove non-pecuniary damages for minor injuries, less expensive compared to pure tort• It creates savings as awards for non-economic damage are eliminated for small cases so there is more money available for more severe injuries	
Part c: 0.5 point	
<p><u>Sample 1</u> Descriptive thresholds because thresholds that are precisely described (in words) have been better at controlling claim costs. Monetary thresholds tend to lead to inflating of claims to reach the threshold.</p> <p><u>Sample 2</u> Combination of descriptive and monetary because descriptive thresholds are easiest to interpret by the courts.</p>	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT
Candidates were expected to demonstrate understanding of combined liability and injury systems, and the concepts related to threshold definitions.
Part a
Candidates were expected to demonstrate understanding of the different types of combined systems. A common mistake was: <ul style="list-style-type: none">• Describing the types of threshold definitions instead of the types of combined systems.
Part b
Candidates were expected to demonstrate understanding of the advantages of combined injury and liability systems. There were no common errors made.
Part c
Candidates were expected to demonstrate understanding of the effectiveness of threshold definitions with regard to controlling claim costs. There were no common errors made.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 8	
TOTAL POINT VALUE: 1.25	LEARNING OBJECTIVE(S): B3
SAMPLE ANSWERS	
Part a: 0.5 point	
<u>Sample 1</u> The objective is to ensure that the program can have enough financial resources to operate without other capital injections and that it takes a reasonable time to regain surplus position after an adverse event	
<u>Sample 2</u> To make sure that the program is self-sustainable over a 25 year period. It will remain at a surplus on a long-term horizon: <ul style="list-style-type: none">• Recovery from 95th percentile deficit in 15 years or less on average• Recovery from 95th percentile deficit 80% probable after 25 years	
<u>Sample 3</u> To ensure continuity of insurance program by making sure past deficits will be recovered. Federal government uses this certification and if not certified, may reduce contributions.	
Part b: 0.75 point	
Any one of the following similarities: <ul style="list-style-type: none">• Both forward looking to get expectation of financials in the future• Both test plausible adverse scenarios to determine impact on financial condition• Both consider all material risks that may impact sustainability• Both utilize scenario testing Any two of the following differences: <ul style="list-style-type: none">• Fully stochastic for self-sustainability• Longer time horizon for self-sustainability• DCAT is usually done each year while self-sustainability certification is not required every year• The period for projection of surplus position starts at the end of the 6th year after an event for self-sustainability while DCAT starts at the beginning• Self-sustainability looks at the time needed to regain surplus position while DCAT does not• DCAT has a base scenario which is consistent with financial plan	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT
Candidates were expected to demonstrate knowledge on the self-sustainability certification in the AgrilInsurance program.
Part a
Candidates were expected to describe the objective of the certification. A common error was: <ul style="list-style-type: none">• Not being specific enough, such as<ul style="list-style-type: none">○ Ensure the program is in satisfactory financial condition for the forecast period.
Part b
Candidates were expected to compare DCAT with the assessment of self-sustainability. A common error was: <ul style="list-style-type: none">• Answering with MCT requirements instead of DCAT. For example:<ul style="list-style-type: none">○ DCAT requires a MCT Ratio over 100%, self-sustainability does not.○ Self-sustainability allows the insurer to be at a deficit during forecast period, DCAT does not.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 9	
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE(S): B1, B2, B3
SAMPLE ANSWERS	
Part a: 0.75 point	
<u>Sample answer</u>	
<ul style="list-style-type: none"> • Adverse selection: only people with a high risk will buy coverage • Flood maps not up to date (lack quality and resolution) • Underinvestment in infrastructure by the government 	
Part b: 1 point	
<u>Sample answer</u>	
<ul style="list-style-type: none"> • Accurate flood maps • Investment in flood defenses • Widespread awareness and sound understanding of stakeholders of financial impact flood risk can cause. • Limited recourse to government funding for past disaster relief as this would encourage strange risk mitigation by stakeholders. 	
Part c: 0.5 point	
<u>Sample answers (two responses required)</u>	
<ul style="list-style-type: none"> • Need to provide accurate flood maps • Needs to address the issue of inefficient land-use by restricting developments in high risk areas • Filling needs unmet by the private insurance • Continue to make contribution to infrastructure and control land usage 	
EXAMINER'S REPORT	
Part a	
<p>Candidates were expected to touch on three different topics:</p> <ul style="list-style-type: none"> • Flood maps • Adverse selection / risk imbalance / pricing issues, and • Underinvestment in infrastructure. <p>Common errors include repeating the same topic twice.</p>	
Part b	
<p>Candidates were expected to touch on four topics:</p> <ul style="list-style-type: none"> • Flood maps • Infrastructure / investment • Awareness, and • Diminished government funding. <p>Common errors include repeating the same topic twice using different words.</p>	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part c

Candidates were expected to present any two government interventions that could help make flood insurance more insurable.

Common errors include:

- Providing a vague generic answer, such as
 - pay flood loss
- Not describing the idea adequately

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 10	
TOTAL POINT VALUE: 3 points	LEARNING OBJECTIVE(S): B1, B2
SAMPLE ANSWERS	
Part a: 0.5 point	
Any response from two of the following categories:	
<p>Taxation related responses:</p> <ul style="list-style-type: none"> • Through general tax revenue, using that to subsidize high risks • Have access to tax revenue in case of deficiency • Increase tax revenue and use it to subsidize • Tax revenue • Use other revenue (such as tax) to ensure affordability of coverage <p>Charge less than actuarially sound rate related responses:</p> <ul style="list-style-type: none"> • Enter the market and provide insurance for less than actuarially sound rates • Charge less than actual cost • Deficit financing as in Flood loss coverage in USA • Charge lower than actuarially sound rate and filling the gap by government special-purpose fund • The government could create a risk sharing pool for high risk losses with a government backstop <p>Other sample responses:</p> <ul style="list-style-type: none"> • Increase public debt • Raise funds through legislation • Use government provided fund to subsidize the losses 	
Part b: 1 point	
Any full response from two of the following categories:	
<p>Efficiency:</p> <ul style="list-style-type: none"> • Higher efficiency: lower cost than private market • Cost efficiency: less costly as they don't have the overhead of a private company like advertising • Greater efficiency, since government insurance does not need to pay commissions, thus are able to save and offer at lower cost <p>Convenience:</p> <ul style="list-style-type: none"> • Convenience: the government can quickly establish a program through legislation or province funding • Convenience: can put in place quickly an insurance plan because has already structure and funding available • Convenience: the government can normally set up an insurance program more easily and more quickly <p>Compulsory insurance:</p> <ul style="list-style-type: none"> • Mandatory insurer: the government may feel obliged to offer mandatory coverage 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- Compulsory insurance: government can operate with limited profit
- Mandatory coverage: allows everyone to obtain mandatory coverage
- Mandatory insurer: to make sure the affordability and availability of the insurance
- Compulsory purchase: for auto insurance in Canada, all drivers must have coverage. Government can leverage tax as subsidy

Social purpose:

- Social purpose: some programs, like unemployment insurance, not only insure people without jobs but also help them to find jobs
- Serve a social purpose. This is the main reason for government participation in insurance, serve a social purpose that can't be attained by private insurers

Part c: 0.5 point

Note that the candidate's response must tie into each of the answers provided by the candidate in part b. above.

Sample responses

Efficiency:

- Efficiency: The cost of private market and public market are the same, so not really higher efficiency
- Efficiency: costs savings may be overstated because some costs are excluded from the program
- Efficiency may be overstated if costs of other government departments helping the insurance department are not accounted for
- Efficiency: Having private insurance companies will increase innovation and insurance companies registered at federal level collaborates as well, which increases the efficiency

Convenience:

- Convenience: competitive market is willing and be able to create new coverage/programs

Compulsory insurance:

- Compulsory insurance: excessive benefit/earning/profit can't sustain in long-term due to the market force in a perfectly competitive market
- Mandatory insurance: private insurer can handle this through a residual market or pool (like with Facility Association)
- Mandatory insurance: when the private market can fully serve the need, eg. A take all comers system

Social purpose:

- Social purpose: a strongly regulated private insurer with strict guidance of standards can do the same
- Social purpose: some insurance could be provided by private insurer and in the meantime fulfill social purpose. i.e. Worker Compensation is provided by private insurer in some states in US

Part d: 1 point

i. Any response from each of the following two categories:

Insurance

- Insurance: premium

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- Insurance: policyholder
- Social welfare
- Social welfare: taxpayer
 - Social welfare: tax revenue

ii. Any response from each of the following two categories:

Insurance

- Insurance: suffer loss covered by insurance contract
- Insurance: triggered by a monetary loss from a covered event

Social welfare

- Social welfare: when people are in need of money
- Social welfare: when become qualified
- Social welfare: the condition/circumstances of the individual in question

EXAMINER'S REPORT

Candidates were expected to under the reasons for government involvement in insurance programs and the differences between insurance and welfare.

Part a

Candidates were expected to briefly describe two methods of loss subsidization that a government insurer can use to fill insurance needs unmet by private insurance.

Common mistakes include:

- Describing a cross-subsidization method instead of loss subsidization such as:
 - Through government mandated rate, where low risk subsidize high risk
 - Charge a flat rate to all insureds to provide coverage to a group of varying cost
- Describing an insurance program built by government without mentioning the corresponding loss subsidization mechanism or method such as:
 - Provide reinsurance coverage to cover losses above a threshold

Part b

Candidates were expected to identify and briefly describe two reasons for government participation in insurance, other than to fill insurance needs unmet by private insurance.

Common mistakes include:

- Listing reasons correctly but not appropriately explained such as:
 - Social purpose. Insurance would help those affected to be better off
 - Compulsory insurance. Either putting in legislation to force people to buy from private insurer, being a provider of insurance itself, or competing with private insurer
- Not providing a description of the reasoning that is related to the reason identified such as:
 - Efficiency. Government has access to more resources and labor than private insurer, allowing the process to occur quicker

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- Convenience. Able to provide compulsory coverage faster than private market and limit profit of insurer for compulsory coverage

Part c

Candidates were expected to briefly describe one situation in which the reason identified in part b. may not be justified.

Common mistakes include:

- Not adequately describing the situation, for example:
 - Social purpose: with government support, people will just rely on the help by government
 - Mandatory insurance: private market is willing to provide available and affordable coverage

Part d

Candidates were expected to contrast insurance and social welfare programs in terms of source of funding and trigger of payment.

Common mistakes include:

- Providing a trigger of payment for insurance without specifying that losses/event incurred should be covered by insurance contract, such as:
 - Based on proof of loss
- Providing a description of trigger of payment for social welfare that is not general enough to cover various situations, such as:
 - Low income
 - Unemployment
- Not understanding the difference between the two triggers such as answering:
 - Insurance: when claim occurs
 - Social welfare: when claim occurs as well

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 11	
TOTAL POINT VALUE: 2.25 points	LEARNING OBJECTIVE(S): B2
SAMPLE ANSWERS	
Part a: 1.25 points	
<ul style="list-style-type: none">• Publicly administered• Comprehensive• Portable• Universality• Accessibility	
Part b: 1 point	
<ol style="list-style-type: none">i. Accessibilityii. Public administrationiii. All conditions metiv. Portability	
EXAMINER'S REPORT	
Candidates were expected to know the necessary conditions for a provincial health care system to receive unreduced funding by the federal government.	
Part a	
Candidates were expected to list or give a description of all five conditions from the text to get credit. There were no common errors.	
Part b	
Candidates were expected to state which criterion from part a., if any, was not met. A common error was: <ul style="list-style-type: none">• Not identifying that all conditions in sub-part iii. were met	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 12	
TOTAL POINT VALUE: 2.5 points	LEARNING OBJECTIVE(S): B1, B2
SAMPLE ANSWERS	
Part a: 0.25 point	
<u>Sample 1</u>	
<ul style="list-style-type: none"> To protect policyholder against insolvent insurer without exposing insurance industry to unlimited liability 	
<u>Sample 2</u>	
<ul style="list-style-type: none"> To provide financial relief to policyholder in the event of insurer insolvency 	
<u>Sample 3</u>	
<ul style="list-style-type: none"> Provide compensation for unearned premium and unpaid claims to policyholder whose P&C insurer becomes insolvent 	
Part b: 1.25 points	
<u>Sample answers for i. (three distinct responses required)</u>	
<ul style="list-style-type: none"> Pay claims and unearned premium Compensate policyholders Collect assessment from solvent participating insurer Receive any 3rd party recoverable to the insolvent insurer Model wind-up order Coordinate with the liquidator as for the working relationship PACICC may pay amount liquidator determines or review its appropriateness Redistribute dividends to surviving members Find a liquidator 	
<u>Sample responses for ii. (one response required)</u>	
<ul style="list-style-type: none"> Prove other source of compensation has been exhausted File a claim with all other possible source of compensation before collecting from PACICC Assign right to recovery from the insolvent insurer's estate to PACICC Get paid from PACICC for claims and unearned premium 	
<u>Sample responses for iii. (one response required)</u>	
<ul style="list-style-type: none"> Pay assessment Make contribution to PACICC as required Pay administration costs to PACICC Receive dividends from PACICC 	
Part c: 1 point	
<u>Sample responses (one answer from four distinct categories)</u>	
Company size:	
<ul style="list-style-type: none"> Smaller size firm has less diversified book Small companies have limited access to capital 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- Size: company with less than 10MM capital

Age of company:

- New companies face strong competition from existing insurers in the market
- Young firms tend to have inexperienced management
- Age: less the age higher the chance of insolvency
- Age: less than 10 years old

Growth of company:

- Companies with rapid growth tend to have inadequate pricing and reserve deficiency
- Fast recent year growth in written premium

Governance and internal control:

- Weak governance and internal control lead to operational failure

Other sample responses:

- Foreign branch due to insolvent parents
- Liquidity level: low liquidity level would be easier to cause insolvencies than those with high liquidity level
- Type of license: two thirds were federally supervised
- Deficient reserves: reserves for liabilities are inadequate
- Underwriting: mostly in auto and property
- Lack of diversification by product line/geographies, such that there is high concentration of risk, leading to higher likelihood of insolvency
- Alleged fraud: fraud happened within firm

EXAMINER'S REPORT

Candidates are expected to understand the purpose for the existence of PACICC, understand the funding mechanism and describe key company characteristics contributing to insurer insolvencies.

Part a

Candidates were expected to briefly describe a reason for the establishment of PACICC.

Common mistakes include:

- Description is not clear enough or missing key elements, e.g., protect policyholders, such as:
 - To redistribute assets of companies if they become insolvent
 - To provide funds for the insurance industry in case of individual insurer insolvency and provide stability to the industry
- Reason listed is irrelevant:
 - To ensure the solvency of the insurance company and to make sure the affordability and availability of insurance

Part b

Candidates were expected to briefly describe the responsibilities of PACICC, the role of claimants of the insolvent insurer and the role of solvent member insurance companies in an event of involuntary exit.

Common mistakes include:

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

i. Three responsibilities of PACICC

- List items that are not PACICC's responsibility, such as:
 - Appoint liquidator
 - Liquidate asset of insolvent insurer
 - Handle claim settlement for insolvent insurer
 - Make a formal wind-up order

- Responsibility listed is not specific enough, such as:
 - Meet with liquidator
 - Coordinate with the insolvent insurer, liquidator and regulatorThe purpose or reasonable details of "meet" and "coordinate" are expected.

- List items similar in nature, such as:
 - Reimburse unearned premium to insured
 - Reimburse claims to insuredNo point was given to the second occurrence of a repeated answer.

ii. The role of claimants of the insolvent insurer

- The role listed is too general and not linked to the specific scenario described in the question: "in the event of an involuntary exit", such as:
 - Make sure their losses are compensated
 - Provide a proof of loss

- The role listed is not true, for example:
 - File claims to PACICC

iii. The role of solvent member insurance companies

- The role listed is too general and not linked to the specific scenario described in the question: "in the event of an involuntary exit", such as:
 - Provide coverage to policyholders of insolvent insurer

Part c

Candidates were expected to briefly describe four company characteristics that play a role in most insurer insolvencies.

A common mistake was:

- Answering without brief description, such as:
 - Rapid growth
 - Company size

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 13	
TOTAL POINT VALUE: 1.5 points	LEARNING OBJECTIVE(S): B2
SAMPLE ANSWERS	
<p>Any three of the following describing both the RSP and the FARM:</p> <ul style="list-style-type: none">• Awareness: Policyholder is unaware that he is transferred to RSP (RSP) Policyholder knows he is with the FA (FA)• Rating : The premium is based on the rates of the private company that transferred his risk to the RSP (RSP) The premium is based on the FA rates (FA)• Limit of risk: There can be a limit of risk you can transfer to the RSP No limit of risk to FA• Type of risk: Any vehicle that is not a PPV and PPVs that have been declined by other insurers for specific reasons (FA) PPV only. (RSP)• Underwriting rules: Member companies underwrite policies according to their own rate and rules (RSP) All policies written by the FARM are subject to underwriting rules of the FA (FA)• Service provider: Policies/Claims serviced and handled via service carriers (FA) Policies/claims serviced and handled by the insurers who issue policy (RSP)	
EXAMINER'S REPORT	
<p>Candidates were expected to demonstrate knowledge of the residual insurance market by describing three differences between the Facility Association Residual Market (FARM) and the Risk Sharing Pool (RSP).</p> <p>A common error was:</p> <ul style="list-style-type: none">• understanding the differences between the two mechanism but not assigning the description to the correct mechanism.	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 14	
TOTAL POINT VALUE: 4.25	LEARNING OBJECTIVE(S): C1
SAMPLE ANSWERS	
Part a: 3.75 points	
Note that for this question we accepted both discounting at mid-year or at year-end.	
<u>Sample 1</u>	
Assuming mid-year payments	
Net Earned Premium = $(100,000 + 80,000 - 90,000) \times 75\% = 67,500$	
Discount factors at 3%: AY 2015 = $(1-0.75)/(1-0.75) \times 1.03^{-0.5} = 0.9853$ AY 2016 = $(0.75-0.5)/(1-0.5) \times 1.03^{-0.5} + (1-0.75)/(1-0.5) \times 1.03^{-1.5} = 0.9710$	
Discount factors at 2.75%: AY 2015 = $(1-0.75)/(1-0.75) \times 1.0275^{-0.5} = 0.9865$ AY 2016 = $(0.75-0.5)/(1-0.5) \times 1.0275^{-0.5} + (1-0.75)/(1-0.5) \times 1.0275^{-1.5} = 0.9733$	
Gross discounted at 3% = $16,000 \times 0.9853 + 41,000 \times 0.9710 = 55,576$ Net discounted at 3% = $55,576 \times 0.75 = 41,682$	
Net PFAD claims = $10\% \times 41,682 = 4,168$ Net PFAD interest rate = $(16,000 \times 0.9865 + 41,000 \times 0.9733) \times 0.75 - 41,682 = 85$ Net PFAD reinsurance = $(55,576 - 41,682) \times 1\% = 139$ Net APV claim liabilities = $41,682 + 4,168 + 85 + 139 = 46,074$	
Net paid claims = $[(39,000 + 50,000 + 75,000) - (35,000 + 60,000)] \times 0.75 = 69,000 \times 0.75 = 51,750$ Net incurred losses = $51,750 + 46,074 - 47,876 = 49,948$	
Net Investment Income: $100 + 200 + 250 + 300 + 400 - 50 = 1,200$ Other Comprehensive Income (OCI): 350	
Net income for 2016 = EP – Incurred – Expenses + Investment Income = $67,500 - 49,948 - 15,000 + 1,200 = 3,752$	
Total comprehensive income for 2016 = Net income + OCI = $3,752 + 350 = 4,102$	
<u>Sample 2</u>	
Assuming mid-year payments	
Net Earned Premium = $(100,000 + 80,000 - 90,000) \times 75\% = 67,500$	
Projection of future payments: AY 2015 in CY 2017 = $16,000 \times ((1-0.75)/(1-0.75)) = 16,000$	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

AY 2016 in CY 2017 = $41,000 \left(\frac{0.75-0.5}{1-0.5} \right) = 20,500$

AY 2016 in CY 2018 = $41,000 \left(\frac{1-0.75}{1-0.5} \right) = 20,500$

Discounted Payment @3%:

$16,000 * 1.03^{-0.5} + 20,500 * 1.03^{-0.5} + 20,500 * 1.03^{-1.5} = 55,576$

Discounted Payment @2.75%:

$16,000 * 1.0275^{-0.5} + 20,500 * 1.0275^{-0.5} + 20,500 * 1.0275^{-1.5} = 55,691$

Net discounted at 3% = $55,576 * 0.75 = 41,682$

Net discounted at 2.75% = $55,691 * 0.75 = 41,768$

Net PFAD claims = $10\% * 41,682 = 4,168$

Net PFAD interest rate = $(41,768 - 41,682) = 86$

Net PFAD reinsurance = $(55,576 - 41,682) * 1\% = 139$

Net APV claim liabilities = $41,682 + 4,168 + 86 + 139 = 46,075$

Net paid claims = $[(39,000 + 50,000 + 75,000) - (35,000 + 60,000)] * 0.75 = 69,000 * 0.75 = 51,750$

Net incurred losses = $51,750 + 46,075 - 47,876 = 49,949$

Net Investment Income: $100 + 200 + 250 + 300 + 400 - 50 = 1,200$

Other Comprehensive Income (OCI): 350

Net income for 2016 = EP – Incurred – Expenses + Investment Income = $67,500 - 49,949 - 15,000 + 1,200 = 3,751$

Total comprehensive income for 2016 = Net income + OCI = $3,751 + 350 = 4,101$

Sample 3

Assuming End of year payments

Net Earned Premium = $(100,000 + 80,000 - 90,000) * 75\% = 67,500$

Discount factors at 3%:

AY 2015 = $(1-0.75)/(1-0.75) * 1.03^{-1} = 0.9709$

AY 2016 = $(0.75-0.5)/(1-0.5) * 1.03^{-1} + (1-0.75)/(1-0.5) * 1.03^{-2} = 0.9567$

Discount factors at 2.75%:

AY 2015 = $(1-0.75)/(1-0.75) * 1.0275^{-1} = 0.9732$

AY 2016 = $(0.75-0.5)/(1-0.5) * 1.0275^{-1} + (1-0.75)/(1-0.5) * 1.0275^{-2} = 0.9602$

Gross discounted at 3% = $16,000 * 0.9709 + 41,000 * 0.9567 = 54,760$

Net discounted at 3% = $54,760 * 0.75 = 41,070$

Net PFAD claims = $10\% * 41,070 = 4,107$

Net PFAD interest rate = $(16,000 * 0.9732 + 41,000 * 0.9602) * 0.75 - 41,070 = 135$

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

$$\text{Net PFAD reinsurance} = (54,760 - 41,070) * 1\% = 137$$

$$\text{Net claim liabilities} = 41,070 + 4,107 + 135, +137 = 45,449$$

$$\text{Net paid claims} = [(39,000 + 50,000 + 75,000) - (35,000 + 60,000)] * 0.75 = 69,000 * 0.75 = 51,750$$

$$\text{Net incurred losses} = 51,750 + 45,449 - 47,876 = 49,323$$

$$\text{Net Investment income: } 100 + 200 + 250 + 300 + 400 - 50 = 1,200$$

$$\text{Other Comprehensive Income (OCI): } 350$$

$$\text{Net income for 2016} = \text{EP} - \text{Incurred} - \text{Expenses} + \text{Investment Income} = 67,500 - 49,323 - 15,000 + 1,200 = 4,377$$

$$\text{Total comprehensive income for 2016} = \text{Net income} + \text{OCI} = 4,377 + 350 = 4,727$$

Sample 4

Assuming End of year payments

$$\text{Net Earned Premium} = (100,000 + 80,000 - 90,000) * 75\% = 67,500$$

Projection of future payments:

$$\text{AY 2015 in CY 2017} = 16,000 ((1-0.75)/(1-0.75)) = 16,000$$

$$\text{AY 2016 in CY 2017} = 41,000 ((0.75-0.5)/(1-0.5)) = 20,500$$

$$\text{AY 2016 in CY 2018} = 41,000 ((1-0.75)/(1-0.5)) = 20,500$$

Discounted Payment @3%:

$$16,000 * 1.03^{-1} + 20,500 * 1.03^{-1} + 20,500 * 1.03^{-2} = 54,760$$

Discounted Payment @2.75%:

$$16,000 * 1.0275^{-1} + 20,500 * 1.0275^{-1} + 20,500 * 1.0275^{-2} = 54,940$$

$$\text{Net discounted at 3\%} = 54,760 * 0.75 = 41,070$$

$$\text{Net discounted at 2.75\%} = 54,940 * 0.75 = 41,205$$

$$\text{Net PFAD claims} = 10\% * 41,070 = 4,107$$

$$\text{Net PFAD interest rate} = 41,205 - 41,070 = 135$$

$$\text{Net PFAD reinsurance} = (54,760 - 41,070) * 1\% = 137$$

$$\text{Net claim liabilities} = 41,070 + 4,107 + 135, +137 = 45,449$$

$$\text{Net paid claims} = [(39,000 + 50,000 + 75,000) - (35,000 + 60,000)] * 0.75 = 69,000 * 0.75 = 51,750$$

$$\text{Net incurred losses} = 51,750 + 45,449 - 47,876 = 49,323$$

$$\text{Net Investment income: } 100 + 200 + 250 + 300 + 400 - 50 = 1,200$$

$$\text{Other Comprehensive Income (OCI): } 350$$

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Net income for 2016 = EP – Incurred – Expenses + Investment Income = 67,500 – 49,323 – 15,000 + 1,200 = 4,377

Total comprehensive income for 2016 = Net income + OCI = 4,377 + 350 = 4,727

Part b: 0.5 point

Sample 1

Recording an asset or liability at fair value means recording it at a value that it would be bought or sold for in the open market. Recording at historical cost means evaluating an asset at the original purchase price less depreciation.

Sample 2

There is a trade-off between the reliability of the historical cost method (in that it is objectively verifiable) and accuracy of the fair value approach (in that it is more consistent with the actual market value).

EXAMINER'S REPORT

The candidate is expected to be able to calculate net income and total comprehensive income from their component parts and calculate the other needed items such as earned premium, net incurred losses, and net investment income.

The candidate is expected to be able to differentiate between fair value and historical value of assets.

Part a

For subpart a., provide commentary on the following:

- To achieve full credit the candidate was expected to convert the unpaid claims triangles, discount them, apply the PfADs, calculate net incurred losses, earned premium, and net income. Given a portfolio of assets (AFS, HTM, HFT) the candidate was expected to understand how the different types of assets flow through to the income statement and be able to calculate the total comprehensive income.

Common mistakes include:

- Not applying the reinsurance on the earned premiums, or the discounted unpaid claims
- Future payments were calculated incorrectly, or based on the paid triangle and not on the unpaid triangle
- Discount factors or discounted future payments were calculated incorrectly
- Net paid claims were not calculated
- Candidates used the APV unpaid losses in the net income calculation and did not calculate the net incurred loss
- Net investment income and Other Comprehensive income were incorrect

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b

Candidates were expected to contrast fair value against historical cost by providing one item for each.

A common mistake includes:

- Not listing one item for each fair value and historical cost

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 15				
TOTAL POINT VALUE: 3.25			LEARNING OBJECTIVE(S): C1	
SAMPLE ANSWERS				
<i>Sample 1</i>				
Age (Months)	Claims Avg Payment	Payment in Year	Discount Factor at 3%	Discount Factor at 2.5%
12	0.5	30%	29.56%	29.63%
24	1.5	70%	66.96%	67.45%
			96.52%	97.08%
Average date of future accident year			0.500	0.500
Average date of premium liabilities			0.333	0.333
Discount factor for premium liabilities			$96.52\% \times 1.03^{(0.5-0.333)} = 97.00\%$	$97.08\% \times 1.025^{(0.5-0.333)} = 97.48\%$
<p>Adjusted Net Unearned Premium = Net Unearned Premium Booked - Expected Reinsurance Costs = 55,000-6,000 = 49,000</p> <p>Net undiscounted Loss & ULAE = Adjusted Net Unearned Premium * Net Undiscounted Loss & ALAE Ratio + ULAE = 49,000 * 98% + 2,500 = 50,520</p> <p>Net Discounted Loss & LAE = Net undiscounted Loss & LAE * PV @ 3% = 50,520 * 0.97 = 49,004</p> <p>Claims pfd = Net Discounted Loss & LAE * MfAD for Claims Development = 49,004 * 10% = 4,900</p> <p>Reinsurance pfd = (Gross Present Value of Loss & LAE - Net Discounted Loss & LAE) * MfAD for Reinsurance = (53,000 – 49,004) * 1% = 39</p> <p>Investment rate pfd = (PV @ 2.5% - PV @ 3%) * Net undiscounted Loss & LAE = (0.9748 – 0.97) * 50,520 = 243</p> <p>Net APV = 49,004 + 4,900 + 39 + 243 = 54,187</p> <p>Maintenance expense = 3% * 60,000 = 1,800</p> <p>Policy Liabilities in connection with UPR = Net APV + Expected Reinsurance Costs + Maintenance expense = 54,187 + 6,000 + 1,800 = 61,987</p> <p>Maximum Allowable DPAE = Max(0, Net Unearned premium – Policy liabilities in connection with UPR + Unearned Reinsurance Commission) = Max(0, 55,000 – 61,987 + 2,300) = 0</p> <p>Premium Deficiency = max(0, Policy liabilities in connection with UPR - Unearned Reinsurance Commission – Net Unearned Premium) = max(0, 61,987 – 55,000 – 2,300) = 4,687</p> <p>Note that there is no premium deficiency or DPAE for facility given that net unearned premium = premium liabilities</p>				

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Sample 2

Age (Months)	Claims on UP Average Payment (in years)	Interpolated Cumulative Payment Pattern	Interpolated Incremental Payment Pattern	Discounted to valuation date @ 3%	Discounted to valuation date @2.5%
12	0.2929	44.5%	44.5%	0.4411	0.4418
24	1.2929	100%	55.5%	0.5342	0.5376
				0.9754	0.9794

Adjusted Net Unearned Premium = Net Unearned Premium Booked - Expected Reinsurance Costs = 55,000-6,000 = **49,000**

Net undiscounted Loss & ULAE = Adjusted Net Unearned Premium * Net Undiscounted Loss & ALAE Ratio + ULAE = 49,000 * 98% + 2,500 = **50,520**

Net Discounted Loss & LAE = Net undiscounted Loss & LAE * PV @ 3% = 50,520 * 0.9754 = **49,277**

Claims pfd = Net Discounted Loss & LAE * MfAD for Claims Development = 49,277 * 10% = **4,928**

Reinsurance pfd = (Gross Present Value of Loss & LAE - Net Discounted Loss & LAE) * MfAD for Reinsurance = (53,000 - 49,277) * 1% = **37**

Investment rate pfd = (PV @ 2.5% - PV @ 3%) * Net undiscounted Loss & LAE = (0.9794 - 0.9754) * 50,520 = **202**

Net APV = 49,277 + 4,928 + 37 + 202 = **54,444**

Maintenance expense = 3% * 60,000 = **1,800**

Policy Liabilities in connection with UPR = Net APV + Expected Reinsurance Costs + Maintenance expense = 54,444 + 6,000 + 1,800 = **62,244**

Maximum Allowable DPAE = Max(0, Net Unearned premium - Policy liabilities in connection with UPR + Unearned Reinsurance Commission) = Max(0, 55,000 - 62,244 + 2,300) = **0**

Premium Deficiency = max(0, Policy liabilities in connection with UPR - Unearned Reinsurance Commission - Net Unearned Premium) = max(0, 62,244 - 55,000 - 2,300) = **4,944**

Note that there is no premium deficiency or DPAE for facility given that net unearned premium = premium liabilities

EXAMINER'S REPORT

Candidates were expected to demonstrate how to calculate discount factor, how to calculate premium liabilities and maximum deferrable policy acquisition expense, and how to determine whether there is premium deficiency.

Common errors include:

- Discount factors: not calculating the average accident date associated with the premium liability properly and simply discounting to the middle of the year
- Net APV calculation: not including the ULAE in the calculation or not subtracting the expected reinsurance costs
- Maintenance expenses: discounting the maintenance expenses or not including the maintenance expenses in the premium liabilities calculation

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 16	
TOTAL POINT VALUE: 1.25	LEARNING OBJECTIVE(S): C1
SAMPLE ANSWERS	
<u>Sample 1</u> Net APV in CY 2015 = 29,000 + 13,000 = 42,000 Net APV in CY 2016 for claims of prior years = 14,000 + 8,000 = 22,000 Net amount paid during 2016 for claims of prior years = (28,000 + 31,000) – (15,000 + 26,000) = 18,000 Investment income during 2016 on unpaid claims of prior years = (42,000 + 22,000) / 2 * 3% = 960 Total Margin (Deficiency) = 42,000 – 22,000 – 18,000 + 960 = 2,960	
<u>Sample 2</u> Net APV in AY 2014 @ CY 2015 = 13,000 Net APV in AY 2014 @ CY 2016 = 8,000 Net APV in AY 2015 @ CY 2015 = 29,000 Net APV in AY 2015 @ CY 2016 = 14,000 Investment income for AY 2014 in CY 2016 = (13,000 + 8,000) / 2 * 3% = 315 Investment income for AY 2015 in CY 2016 = (29,000 + 14,000) / 2 * 3% = 645 Net amount paid for AY 2014 in CY 2016 = 31,000 – 26,000 = 5,000 Net amount paid for AY 2015 in CY 2016 = 28,000 – 15,000 = 13,000 Total Margin (Deficiency) = (13,000 - 8,000) + (29,000 - 14,000) - (5,000 + 13,000) + (315 + 645) = 2,960	
EXAMINER'S REPORT	
Candidates were expected to be able to calculate the margin for 2016 by working out which parts of the cumulative paid losses, and the actuarial present value of loss and ALAE applied for the specified period. They were also expected to calculate the investment income based off only the reserves that would be in effect at the beginning and end of the period.	
Common mistakes include:	
<ul style="list-style-type: none">• Not correctly differentiating between calendar years and accident years.• Calculating the net investment income incorrectly due to the use of the incorrect loss reserves applied to the beginning and the ending of the period.• Subtracting the cumulative paid losses from the margin calculation and not the incremental paid losses for that period.	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 17	
TOTAL POINT VALUE: 3 points	LEARNING OBJECTIVE: C1
SAMPLE ANSWERS	
Part a: 0.75 point	
<p>Any three of the following:</p> <ul style="list-style-type: none"> • Increase large line capacity • Provide catastrophe protection • Provide surplus relief • Facilitate withdrawal from a market segment • Provide underwriting guidance 	
Part b: 1.5 points	
<p>There were inconsistencies with the information provided in the question that affected the net earned premium calculation. As a result, we accepted both solutions as shown below.</p> <p><u>Sample 1</u></p> <ul style="list-style-type: none"> i. $NWP = 1,550 - 100 = 1,450$ ii. $NEP = 1,450 + 0 - 700 = 750$ iii. $NUEP = 700 - 0 = 700$ iv. $Net\ IL = \text{Min}(800, 600) = 600$ v. $UW\ Incurred = 750 - 600 - 200 = -50$ vi. $Net\ unpaid = 600 - 200 = 400$ <p><u>Sample 2</u></p> <ul style="list-style-type: none"> i. $NWP = 1,550 - 100 = 1,450$ ii. $NEP = 750 - 100 = 650$ iii. $NUEP = 700 - 0 = 700$ iv. $Net\ IL = 600$ v. $UW\ Incurred = 650 - 600 - 200 = -150$ vi. $Net\ unpaid = 600 - 200 = 400$ 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part c: 0.75 point

Sample 1

It can qualify if there is at least 10% change to make a 10% loss.

Scenario C has a probability of 25%. The loss to the reinsurer is -\$100, or $-100/100 = -100\%$

Therefore, it qualifies.

Sample 2

For scenario A and B the reinsurer pays nothing. However, for scenario C, the reinsurer incurs a deficit equal to $(100-200)/100 = -100\%$ of the premium. According to the ERD rule, there is risk transfer if $ERD > 1\%$. Here ERD is $25\% * 100\% = 25\%$. There is risk transfer so qualifies as reinsurance.

Sample 3

Yes, this qualifies as reinsurance because the risk transfer is reasonably self-evident because there are no limiting risk transfer contract features. There is a reasonable chance (25%) of the significant transfer of material risk.

EXAMINER'S REPORT

Candidates were expected to know the functions of reinsurance, understand the effect of reinsurance on financial statements and understand the concept of risk transfer.

Part a

Candidates were expected to list three functions of reinsurance.

Common errors include:

- For candidates that related the reinsurance function to the introduction of a new line of business, in addition to providing underwriting guidance, only one of the two (not both) responses were accepted.
- Responding with an answer that discussed stabilizing or mitigating loss experience.

Part b

Candidates were expected to calculate each of the components from the information given.

Common mistakes include:

- Using the incorrect formula: $NUEP = NWP - NEP$
- Calculation errors

Part c

Candidates were expected to identify the approach, provide supporting calculations and comment on whether the excess of loss treaty qualifies as reinsurance.

Common errors include:

- Answering "yes" or "no" without providing any explanations.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- Identifying the rule and commenting on whether the treaty qualifies as reinsurance without providing calculation support.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 18	
TOTAL POINT VALUE: 3.5	LEARNING OBJECTIVE(S): C1
SAMPLE ANSWERS	
Part a: 1.5 points	
<p><u>Sample answer</u> (Numbers in millions) East PML 420 = $0.68 * 1000 + 0.32 * 600 = 872$ West PML 420 = $0.68 * 600 + 0.32 * 350 = 520$ Max (East PML 420, West PML 420) = 872</p> <p>Countrywide PML 500 = $(1000^{1.5} + 600^{1.5})^{(1/1.5)} = 1290$</p> <p>Countrywide PML 440 = $(2022-2016)/8 * 872 + (2016-2014)/8 * 1290 = 976.5$</p> <p>Financial resources = 10% of Surplus = $0.1 * 3000 = 300$</p> <p>EPR = 0</p> <p>EQ Reserve Component = $976.5 - 300 = 676.5$</p> <p>EQ Reserve = $1.25 * (EPR + ERC) = 1.25 * (0 + 676.5) = 845.6$</p>	
Part b: 2 points	
<p><u>Sample answer</u></p> <ul style="list-style-type: none"> • Data quality: need to understand the impact of data limitations on results and make appropriate adjustments • Non-modelled exposures and risk factors: need to consider risks that are not adequately considered in the model, e.g. auto and marine insurance (or any other valid examples) • Model uncertainty: need to factor in a safety margin to account for uncertainty associated with model assumptions • Exposure to multiple regions: it is not sufficient to only base the PML on the larger of the BC and Quebec PMLs. This approach understates the PML for insurers with significant exposures to both regions. <p><u>Additional answers also accepted:</u></p> <ul style="list-style-type: none"> • Data verification: insurers should have processes in place to verify data accuracy and completeness • Model validation: compare model estimates against actual events to verify whether the results are consistent • Model versions: insurers should consider using more than one model to counter the inherent uncertainty in models • Staffing/training: ensure there are adequately qualified staff to run in-house models and that the staff understands the assumptions underlying the model 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT

Candidates were expected to know the earthquake reserve calculation and understand the considerations related to PML estimates.

Part a

Candidates were expected to be able to calculate the 2016 earthquake reserves as outlined in the MCT guideline.

Common mistakes include:

- Calculating the EQ Reserve Component instead of the Earthquake Reserves
- Incorrectly calculating the East and West PML 420
- Not considering the Financial Resources

Part b

Candidates were expected to demonstrate understanding of the considerations related to PML estimates. Considerations related to the use of earthquake models were also accepted as valid answers.

A common mistake was:

- Listing a consideration without proper description.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 19				
TOTAL POINT VALUE: 1.75		LEARNING OBJECTIVE(S): C1		
SAMPLE ANSWERS				
		Total	12	24
(1)	Payment Pattern		50%	100%
(2)	Incremental Payment Pattern		50%	50%
(3) = (2) * Total	Estimated Payment for each period	4,000	2,000	2,000
(4)	Payment duration		0.5	1.5
(5)	Risk free rate		2%	2%
(6) = PV of (3) @2%	PV of payment	3,922	1,980	1,941
(7)	Cash flow undiscounted future		4,000	2,000
(8)	Required margin		10%	10%
(9) = (7) * (8) * 2	Regulatory capital at 200%		800	400
(10)	risk cost of capital		10%	10%
(11) = (9) * (10)	cost of capital		80	40
(12)	Duration		1	2
(13)	Discount rate		2%	2%
(14) = PV of (11) @2%	Risk margin	117	78.4	38.4
Commuted Value (total 3 + total 14)		4,038		

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT

Candidates were expected to understand how to calculate the commuted value of liabilities including the present value of future payments and discounted cost of capital.

Common errors include:

- Discounting claim payments using the end-of-year assumption instead of the mid-year assumption without explicitly stating the assumption
- Discounting cost of capital using the mid-year assumption instead of the end-of-year assumption without explicitly stating the assumption
- Assuming amount of capital is equal to claim payments made during the year

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 20	
TOTAL POINT VALUE: 4.25	LEARNING OBJECTIVE(S): C2
SAMPLE ANSWERS	
Part a: 1.75 points	
<u>Sample 1</u>	
Premium Liability = $\max(30\% \times (135,000+20,000-50,000), 29,000-3,000) \times 20\% = 6,300$	
Unpaid Claims = $(56,416-3,069) \times 14\% = 7,468.58$	
Unregistered reinsurers:	
Receivable letters of credit = $30\% \times (5,000 + 25,000) = 9,000$	
Required collateral to reduce to 0 the capital required = $(5,000 + 25,000) \times 1.15 + 800 = 35,300$	
Acceptable collateral = $20,000 + 9,000 = 29,000$	
Max Capital Required = $(5,000 + 25,000) \times 15\% = 4,500$	
Capital Required = $\min(35,300 - 29,000, 4,500) = 4,500$	
Insurance risk margin = $6,300 + 7,468.58 + 500 + 4,500 = 18,768.58$	
<u>Sample 2</u>	
Unpaid Claim Margin = $(\text{Net Claim} - \text{PfAD}) \times \text{Risk factor}$ $= (56,416 - 3,069) \times 14\%$ $= 7,468.58$	
Premium Liab. Margin = $\text{Max}(\text{Net amount} - \text{PfAD}, 30\% \times \text{Net WP}) \times \text{Risk factor}$ $= \text{Max}(29,000 - 3,000, 30\% \times (135,000+20,000-50,000)) \times 20\%$ $= \text{Max}(26,000, 31,500) \times 20\%$ $= 31,500 \times 20\%$ $= 6,300$	
Unregistered Reinsurance	
15% Margin = $(\text{UP ceded} + \text{O/S losses recoverable}) \times 15\% = 4,500$	
Can be reduced by acceptable collateral	
LOC limited to $30\% \times (\text{UP ceded} + \text{O/S losses recoverable}) = 9,000$	
Can only use 9,000 of LOC	
Acceptable collateral in excess of recoverable = $\text{Max}(20,000+9,000-5,000-25,000-800, 0)$ $= \text{Max}(-1,800, 0)$ $= 0$	
Insurance risk margin for unregistered reinsurance = $4,500 - 0 = 4,500$	
Insurance risk margin = $7,468.58 + 6,300 + 4,500 + 500 = 18,768.58$	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b: 1 point

Sample 1

$$\text{Liabilities Duration} = (56,146 \times (1.51) + 29,000 \times (0.5)) / (56,146 + 29,000) = 1.1671$$

	Value	Duration	$-\Delta y$	$+\Delta y$
Asset	150,000	1	-1,875	1,875
Liability	85,416	1.1671	-1,2460.10	1,246.10
				628.90

$$\text{Market Risk Margin} = 628.90 + 0 + 500 + 40 + 10 = 1,178.90$$

Sample 2

$$\text{Asset} \times \text{Duration} \times \text{Risk shock} = 150,000 \times 1 \times 1.25\% = 1,875$$

$$\text{Premium Liab.} \times \text{Duration} \times \text{Risk shock} = 29,000 \times 0.5 \times 1.25\% = 181.25$$

$$\text{Claims Liab.} \times \text{Duration} \times \text{Risk shock} = 56,416 \times 1.51 \times 1.25\% = 1,064.85$$

$$\text{Interest rate risk} = \text{Max}(1,875 - 1,246, -1,875 - (-1,246)) = 629$$

$$\text{Market risk margin} = 629 + 0 + 500 + 40 + 10 = 1,179$$

Part c: 0.75 point

Sample 1

$$\text{Cap} = 30\% \times (18,768.58 + 1,178.9 + 810) = 6,227$$

$$\text{Gross Premium Growth} = 40,000 / (135,000 + 20,000 - 40,000) = 34.8\%$$

$$\text{Above the 20\%} : 40,000 - (135,000 + 20,000 - 40,000) \times 20\% = 17,000$$

$$\text{Uncapped operational risk margin} = 8.5\% \times (18,768.58 + 1,178.9 + 810) + 135,000 \times 2.5\% + 20,000 \times 1.75\% + 50,000 \times 2.5\% + 17,000 \times 2.5\% = 7,164$$

$$\text{Operational Risk Margin} = \text{Min}(6,227, 7,164) = 6,227$$

Sample 2

$$\text{Growth} = (135,000 + 20,000) / (135,000 + 20,000 - 40,000) = 1.3478$$

$$\text{Growth in excess of 20\%} = (1.3478 - 1.2) / (1.3478 - 1) \times 40,000 = 17,000$$

$$\text{CRo} = 18,769 + 1,179 + 810 = 20,758$$

$$\text{Operational Risk Margin} = \text{Min}(30\% \times \text{CRo}, 0.085 \times \text{CRo} + 0.025 \times 135,000 + 0.0175 \times 20,000 + 0.025 \times 50,000 + 0.025 \times 17,000) = 6,227$$

Part d: 0.75 point

Sample 1

$$\text{Diversification credit} = A + I - (A^2 + I^2 + 2 \times R \times A \times I)^{0.5}$$

$$A = 810 + 1,179 = 1,989$$

$$I = 18,769$$

$$R = 0.5$$

$$\text{Diversification credit} = 920$$

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Capital required at target = $18,769 + 1,179 + 810 + 6,227 - 920 = 26,065$

Sample 2

Capital required at target = Operational Risk Margin + $(A^2 + I^2 + 2 \times R \times A \times I)^{0.5} = 26,065$

$A = 810 + 1,179 = 1,989$

$I = 18,769$

EXAMINER'S REPORT

Candidates were expected to know how to calculate the various components of the MCT formula.

Part a

Candidates were expected to know how to calculate the different components of the capital required for insurance risk.

Common mistakes include:

- Adding or not removing PfADs to net claim liabilities for the calculation of the capital required for unpaid claims.
- For the net premium liabilities, the average risk factor was not properly applied, i.e. $\text{Max}(30\% \times \text{NWP, Net Prem. Liab.}) \times 20\%$ vs $\text{Max}(30\% \times \text{NWP, Net Prem. Liab.} \times 20\%)$
- The limit on letters of credit was ignored.
- The reduction in capital required for unregistered reinsurance was not limited to a positive number. Many candidates applied the following formula :
 $1.15 \times (\text{UEP} + \text{O/S losses recoverable}) - (\text{UEP} + \text{O/S losses recoverable} + \text{Reinsurance receivable} - \text{Non-owned Deposits} - \text{Letters of credit})$
This formula produced a capital required for unregistered reinsurance greater than the maximum capital of $15\% \times (\text{UEP} + \text{O/S losses recoverable})$.

Part b

Candidates were expected to know how to apply the interest rate shock test to calculate the capital required for interest rate risk. Candidates were also expected to know how to calculate the market risk margin by summing its components.

Common mistakes include:

- Adding or removing PfADs to net claim or premium liabilities.
- Applying the interest rate shock test on assets only.
- Not calculating the margin for market risk.
- Not including one or more of the following: equity risk, real estate risk, foreign exchange risk and other market risk exposures in calculating the margin for market risk.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part c

Candidates were expected to know how to calculate the margin for operational risk.

A common mistake was:

- Not calculating the growth in excess of 20% properly, either by using direct written premium rather than gross written premium or by calculating the growth on the premium at the end of the period rather than on the one at the beginning of the period.

Examples of improper calculation include:

- $40,000 - (135,000 \times 1.2 - 135,000) = 13,000$
- $40,000 - (155,000 \times 1.2 - 155,000) = 9,000$
- $40,000 - (135,000 - (135,000 - 40,000) \times 1.2) = 19,000$
- $135,000 - (135,000 - 40,000) \times 1.2 = 21,000$

Part d

Candidates were expected to know how to calculate the diversification credit and the capital required at target.

Common mistakes include:

- Using $(A^2 + I^2 - 2xRxAxI)^{0.5}$ instead of $(A^2 + I^2 + 2xRxAxI)^{0.5}$ in the diversification credit calculation.
- Dividing the capital required by 1.5. This gives the minimum capital required instead the one at target.
- Not including the credit risk margin within the calculation of A.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 21	
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE(S): C2
SAMPLE ANSWERS	
Part a: 0.75 point	
<p><u>Sample 1</u></p> <ul style="list-style-type: none"> • Both involve scenario/stress testing • Both are submitted to regulators • Both involve identification of material risks <p><u>Sample 2</u></p> <ul style="list-style-type: none"> • Both must be done annually • Both are forward looking to mitigate risk/threats to company • Both are sent to regulators for financial health of company <p><u>Sample 3</u></p> <ul style="list-style-type: none"> • DCAT and ORSA both consider various scenarios to identify risks • DCAT and ORSA both assess the capital required related to risk • DCAT and ORSA both need to be regularly report to Board (annually) <p><u>Sample 4</u></p> <ul style="list-style-type: none"> • Both include stress testing and adverse scenarios • Both are able to identify material risks to the company • Both identify corrective actions to mitigate risks <p>Other solutions considered:</p> <ul style="list-style-type: none"> • A report is prepared for each of them 	
Part b: 1.5 points	
<p><u>Sample 1</u></p> <p>Difference 1</p> <ul style="list-style-type: none"> • DCAT follows CIA standards of practice • ORSA follows OSFI guideline <p>Difference 2</p> <ul style="list-style-type: none"> • DCAT is AA responsibility • ORSA is management's responsibility <p>Difference 3</p> <ul style="list-style-type: none"> • DCAT only contains quantitative analysis • ORSA has both quantitative and qualitative analysis <p><u>Sample 2</u></p> <ul style="list-style-type: none"> • DCAT covers only the prescribed risk whereas ORSA covers all relevant risks to the enterprise • DCAT is to illustrate that the entity's financial condition is satisfactory (MCT) whereas ORSA is to set the Internal Target Capital relating to all material risks 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- DCAT is mostly quantitative whereas ORSA has more qualitative components

Sample 3

- DCAT focus on quantitative aspect of adverse impact. ORSA captures the whole assessment including qualitative analysis, company governance and internal controls.
- Actuaries are responsible for DCAT model and final ultimate responsibility of ORSA falls into Board of Directors/management level.
- DCAT has clear analysis threshold. ORSA has no standardized quantitative threshold but more subject to overview enterprise-wide perspective including business plan, strategy and long-term/short-term financial capital plan.

EXAMINER'S REPORT

Candidates were expected to understand and describe the similarities and differences between DCAT and ORSA.

Part a

Candidates were expected to briefly describe three similarities between DCAT and ORSA.

Common mistakes include:

- Describing a similarity that is actually a difference such as “both are based on company’s own risk profile”
- Describing two different similarities that are alike such as:
 - Both assess the financial soundness of insured
 - Both use insurance test scenarios to examine capital adequacy/solvencyNo point was given to the second occurrence of a repeated answer.
- Identifying less than three similarities.

Part b

Candidates were expected to describe three differences between DCAT and ORSA.

Common mistakes include:

- Describing less than three differences.
- Not providing enough of a description of the identified difference or only discussing one of the two processes (i.e., “DCAT needs to be signed by Appointed Actuary” or “ORSA is more tailored to reflect company’s nature/complexity”).
- Incorrectly describing ORSA as purely qualitative since it contains both quantitative and qualitative aspects.
- Confusing the DCAT description with ORSA and vice versa (i.e., mentioning DCAT is qualitative).

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 22	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE(S): C2
SAMPLE ANSWERS	
Part a: 1 point	
<p><u>Sample 1</u></p> <p>Company A's financial condition is not satisfactory due to its MCT ratio being lower than 150% for the base scenario. Company B's financial condition is satisfactory, because 1) base scenario MCT >150% and 2) equity >0 for all scenarios.</p> <p><u>Sample 2</u></p> <p>To satisfactory:</p> <ol style="list-style-type: none"> 1) Under base scenario and all adverse scenarios, equity >0 2) Under base scenario, MCT ≥ 150. <p>So company A 1) OK, 2) MCT < 150 therefore not satisfactory Company B is satisfactory.</p>	
Part b: 0.75 point	
<p><u>Sample 1</u></p> <p>Social inflation is the increase in costs because of change in the likelihood of claimants bringing suit, change in awards and change in attitude toward settlement. It increases claim liabilities for the lines subject to go to court.</p> <p><u>Sample 2</u></p> <p>Increases in costs due to changes in public behavior, being more likely to submit a claim or more likely to sue, resulting in high costs to the company, and can result in inadequate premiums and loss reserves.</p>	
Part c: 0.75 point	
<p>Off-balance sheet risk</p> <p><u>Sample answers</u></p> <ul style="list-style-type: none"> • The credit risk associated with the insolvency of the annuity company used to satisfy a structured settlement • Contingent liabilities or losses due to tax, litigation, etc. • The risk that a lending institution defaults on a letter of credit, or a call on pledged assets • The parent company not honoring the capital maintenance agreement • The risk of derivative instruments. • Pension underfunding <p>Ripple effects</p> <p><u>Any one of the following:</u></p> <ul style="list-style-type: none"> • Forced sale or liquidation of assets, • Significant positive or negative cash flows, affecting the company's financial position. 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Possible corrective management actions

Any one of the following:

- Changing the pension plan from a defined benefit to a defined contribution;
- Selling or reinvesting assets;
- Changing the reinsurance strategy;
- Repositioning of derivative tools;
- Reducing costs through layoffs, consolidation of branch offices, or other similar actions
- Premium rate increases

EXAMINER'S REPORT

Candidates were expected to demonstrate solid understanding of how to assess a company's financial condition based on high-level DCAT results, the MCT ratios and equity values under various scenarios over the forecast period.

Candidates were expected to demonstrate the understanding of the concept of social inflation and how it affects a company's financials.

Candidates were expected to demonstrate the understanding of off- balance-sheet risks, the ripple effects, and the associated corrective actions.

Part a

Candidates were expected to clearly set out the two criteria that are used to assess a company's financial condition. In addition, candidates were expected to apply the criteria to the two companies to reach the correct conclusion.

Common mistakes include:

- Using $MCT > 100\%$ or other numbers as the second success criterion.
- Evaluating the companies by commenting "good" or "not good" without setting out clear criteria.

Part b

Candidates were expected to link increases in losses with factors such as higher jury awards, changes in the likelihood of claimants bringing suit, etc. Candidates were also expected to differentiate social inflation from the inflation driven by economic factors.

Common mistakes include:

- Mixing up the concepts of inflation and social inflation
- Mixing up the concept of social inflation with the effect due to adverse selection
- Being too general in discussing the effect of social inflation on the company
- Simply saying social inflation is caused by society or by people

Part c

Candidates were expected to demonstrate an understanding of risks not reflected on the balance sheet, their potential impact, as well as potential management action.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Common mistakes include:

- Commenting on balance-sheet risks or questioning the quality of the balance sheet numbers.
- Using rate agency downgrade as a ripple effect

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 23	
TOTAL POINT VALUE: 1.5 points	LEARNING OBJECTIVE: C2
SAMPLE ANSWERS	
Part a: 0.5 point	
<p><u>Sample 1</u> A scenario that is $\geq 95^{\text{th}}$ percentile (adverse) but $\leq 99^{\text{th}}$ percentile (plausible). For example, there is a 2% chance that unpaid claim would increase by 20% due to catastrophic event.</p> <p><u>Sample 2</u> A plausible adverse scenario is a scenario of which company's financial condition is sensible to and for which it would have an adverse effect on the company. Considered plausible if between 95^{th} and 99^{th} percentile of possible outcome.</p>	
Part b: 1 point	
<p><u>Sample 1</u></p> <ol style="list-style-type: none"> i. Gain of a key distributor ii. Significant increase in premium volume iii. Increase in operating expenses iv. Implement rate increases <p><u>Sample 2</u></p> <ol style="list-style-type: none"> i. New market entry or competitor ii. Decrease in premium written iii. Increase in loss ratios iv. Implement rate increases <p><u>Sample 3</u></p> <ol style="list-style-type: none"> i. Exit of major competitor leading to unexpected premium increase ii. NWP increase by 30% per year with deteriorating loss ratio iii. Increased reinsurance costs due to increased volume iv. Review underwriting guidelines to ensure business written is profitable business <p>All other risk factor, ripple effect and corrective management action within Appendix B was considered as a valid solution.</p>	
EXAMINER'S REPORT	
Candidates were expected to know the basic definitions of plausible adverse DCAT scenario, and be able to provide descriptions of the various components of the scenario testing.	
Part a	
Candidates were expected to define a plausible adverse DCAT scenario including two of the following three items in their responses: <ul style="list-style-type: none"> • $> 95\%$ to be deemed adverse • $< 99\%$ to be deemed plausible • Impact on the company's financial condition 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Common mistakes were:

- Confusing the definition of plausible and adverse, for example, stating that >95% meant a scenario was plausible and <99% meant as scenario was adverse
- Including only one of the three items listed above

Part b

Candidates were expected to discuss characteristics of a plausible premium volume adverse scenario as described in the DCAT education note.

Common mistakes include:

- Confusing ripple effects and corrective management action
- Confusing adverse assumptions and ripple effects
- Identifying the premium volume increase or decrease as the event
- Identifying the effect on the loss ratio as a major assumption instead of ripple effect
- Describing events that do not lead to premium risk

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 24	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE(S): C2
SAMPLE ANSWERS	
<u>Sample 1</u> 1- Risk identification and control: All material risks should be identified and interdependencies between risks should be considered. 2- Complementary risk assessment tool: Should complement other risk assessment tools. Method used for a risk should depend on the complexity for this risk. 3- Improve capital management: The identification of adverse scenarios should help to see in which situations a company could have capital problems and potential solutions. 4- Improve liquidity management: The identification of adverse scenarios should help to see in which situations a company could have liquidity problems and potential solutions.	
<u>Sample 2</u> 1- Risk identification and control: Identify all risks and business areas to have a complete picture of the company. 2- Complement other risk management tool: Provide insights about complex quantitative models. Helps to detect vulnerabilities. 3- Support capital management: Help to identify adverse events due to financial market or environment changes on financial condition. 4- Improve liquidity management: Assess liquidity profile and if liquidity buffers are sufficient in adverse scenarios.	
<u>Sample 3</u> 1- Risk identification and control: Can detect concentration and interaction within and across risks during stress scenarios which otherwise may be unnoticed. 2- Complementary risk perspective: Can be used to validate and verify findings from other risk modeling techniques. 3- Improve liquidity management: Can understand payment needs and asset availability during stress scenarios. 4- Help capital management: Interactions and concentrations of risk have material impact on capital needs.	
<u>Sample 4</u> 1- Identification of risk: To make sure you identified material risks that could impact the financial health of the company. 2- Support capital management: Understand where the risks are and set the required capital to cover them. 3- Complement risks assessment: Complement the other risk assessments at the company and confirm other techniques. 4- Improve liquidity management: Make sure assets are liquid enough and that cash flows will allow protecting against liquidity risk.	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT

Candidates were expected to demonstrate an understanding of the purposes of a stress testing program within an insurance company.

Common mistakes include:

- Identifying less than four purposes.
- Not briefly describing purposes or rephrasing the purpose identified without adding any additional information, such as:
 - Identify material risk: The stress testing program helps to identify significant risks.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 25	
TOTAL POINT VALUE: 4	LEARNING OBJECTIVE(S): C2
SAMPLE ANSWERS	
Part a: 1.5 points	
<p><u>Sample 1</u> Net prem earned = 67,900 – 2,000 = 65,900 Underwriting income = 65,900 – 63,500 = 2,400 II = 1,500 + 1,000 – 400 = 2,100 Net income = 2,400 + 2,100 + 1,800 = 6,300</p> <p>Equity = 112,000 – 90,000 = 22,000 ROE = 6,300 / 22,000 = 28.64%</p> <p><u>Sample 2</u> NII = 1,500 + 1,000 – 400 = 2,100 $i = 1.93\% = 2 \text{ NII} / \text{Ab} + \text{Ae} - \text{NII} = 2 * 2,100 / (\text{Ab} + 112,000 - 2100)$ Ab = 107,717 Avg A = (107,717 + 112,000) / 2 = 109,859</p> <p>RoA = 2.73% = NI / 109,859 NI = 3,000 RoE = 3,000 / 22,000 = 13.6%</p>	
Part b: 1.5 points	
<p><u>Sample ratio calculations (three required)</u></p> <ul style="list-style-type: none"> • $\text{RoR} = (\text{UW Income} + \text{Invest Income w/o gain} + \text{Income Subsidiaries}) / \text{GWP} = (65,900 - 63,500 + 1,500 - 400 + 1,800) / 70,400 = 7.5\%$ • $\text{Overall leverage ratio} = (\text{NWP} + \text{Liab}) / \text{E} = (67,900 + 90,000) / 22,000 = 717.7\%$ • $\text{UW leverage ratio} = \text{NWP} / \text{E} = 67,900 / 22,000$ • $\text{Liabilities} / \text{Equity} = 90,000 / 22,000 = 409\%$ • $\text{Insurance return to net EP} = \text{UWI} + \text{II (excl gain/loss) attributable to UW activities} / \text{NEP} = (2,400 + 0.7 * (1,500 - 400)) / (67,900 - 2,000) = 4.81\%$ • $\text{Combined ratio} = 63,500 / 65,900 = 96.36\%$ 	
Part c: 1 point	
<p><u>Sample 1</u> ROE > 5.4% Good Net leverage > 500% Bad Net UW leverage > 300% Bad RoR > 6.2% Good</p> <p>Good returns, however the company is writing too much business compared to its equity. Need to be cautious.</p>	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Sample 2

RoA > 2.6% favorable

Net US leverage ratio > 300% unfavorable

RoR > 6.2% favorable

The company appears to be profitable, but is starting to fail some of the ratio tests. Should review how MCT ratio compares to company's internal target, and look to increase its capital.

EXAMINER'S REPORT

Candidates were expected to evaluate the financial health of an insurance company based on various financial metrics.

Part a

Candidates were expected to demonstrate how net income is calculated and how it is incorporated into the financial profitability ratios including the return on equity.

Common mistakes include:

- Calculating net income by multiplying the Return on Assets by current year asset balance, when the prior year asset balance is required and not given in the question (denominator is average assets).
- Omitting net income from subsidiaries from net income calculation
- Adding \$2,000 to GPW to get NPW instead of subtracting

Part b

Candidates were expected to identify and correctly calculate various profitability and solvency ratios.

Common mistakes include:

- Errors in the calculation of the more complex RoR and Insurance Return on Net Premiums Earned including gains
- Failing to correctly apply the fact that 70% of the company's investment income and expenses was attributable to underwriting-related activities.

Part c

Candidates were expected to compare previously calculated ratios to their thresholds and comment on the company's profitability and/or solvency.

Common mistakes include:

- Comparing to incorrect thresholds
- Not providing any insight beyond comparing to thresholds

Note that the following responses did not receive any credit:

- The company's financial health is satisfactory
- The company's financial health is not satisfactory

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 26	
TOTAL POINT VALUE: 1.5	LEARNING OBJECTIVE(S): C2
SAMPLE ANSWERS	
<p><u>Sample 1</u></p> <ul style="list-style-type: none">• Company A is a subsidiary of an international group, so it has easier access to capital compared to a domestic mutual company.• The primary CAT exposure of Company A occurs much less frequently compared to the primary cat of Company B.• The standard deviation of the combined ratio for Company A is lower than Company B, indicating stability in loss history. <p><u>Sample 2</u></p> <ul style="list-style-type: none">• Flexibility of capital access: Company A is a subsidiary of international group, which has more access to capital than domestic mutual company• Historical volatility of operation performance: company A has a smaller standard deviation of combined ratio for the last ten years, which indicate stronger operation.• Frequency to catastrophic exposure: Company A is exposed to earthquake, and its frequency is much smaller than tornado, so more tolerance.	
EXAMINER'S REPORT	
<ul style="list-style-type: none">• Candidates were expected to demonstrate the knowledge of how to evaluate the financial health of an insurance entity based the A.M. Best rating system to identify the historic loss ratio volatility, capital accessibility and the multiple frequency nature of catastrophic events.• Common errors include:<ul style="list-style-type: none">○ Some candidates mistakenly stated that domestic company is less diversified, which was not mentioned in the question.○ Some candidates were not able to provide enough details in the answer. For example, only partial credit was given to candidates who pointed out that the standard deviation of Company A's combined ratio is lower than Company B's without indicating what the implication of this is.○ Some candidates were not able to identify the frequency nature of catastrophic events as one of the factors in A.M. Best rating system.	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 27	
TOTAL POINT VALUE: 3	LEARNING OBJECTIVE(S): D1
SAMPLE ANSWERS	
<u>Sample 1</u>	
<ul style="list-style-type: none">• Personal property MfAD for claim development below the low level specified in the CIA SOP, the AA should provide justification.• The PfAD for reinsurance ceded should not be calculated like this. The MfAD should be applied to the NPV of the losses +LAE, not to the premium.• The net actuarial claim benefit liability is not calculated appropriately, because the ceded claim liab includes a PfAD for recovery of reinsurance ceded. The AA should subtract the PfAD instead of adding it.• Notifying senior management of the issue is not sufficient. The AA should specify a date at which, if not action is taken; the AA will have to notify the superintendent.	
<u>Sample 2</u>	
<ul style="list-style-type: none">• The actuary used 2% MfAD for personal property, which is below the guidance of 2.5% - 20% without merit. The AA should select a higher MfAD.• Reinsurance PfAD is determined in correctly. Should multiply MfAD by PV of unpaid losses.• MfAD for investment risk should not include regulatory risk. Should consider A/L mismatch risk, timing risk and etc.• The AA should inform the Board in addition to senior management with a date for action.	
EXAMINER'S REPORT	
Candidates were expected to demonstrate a solid understanding of the CIA standards of practice and OSFI requirements as they pertain to AA functions.	
Common mistakes include	
<ul style="list-style-type: none">• Using incorrect thresholds.• Questioning the AA's qualification for the new appointment.• Questioning the quality of AA's judgement in selecting methods and assumptions.• Requiring immediate OSFI notification of the matters requiring rectification.• Identifying the 2% MfAD as below the minimum threshold, but not identifying appropriate actions.	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 28	
TOTAL POINT VALUE: 1.5	LEARNING OBJECTIVE(S): D1
SAMPLE ANSWERS	
Part a: 0.75 point	
<p><u>Sample 1</u> This is a subsequent event since awareness was before report date and after calculation date. AA should disclose it in note as the purpose is to report the company as at calculation date.</p> <p><u>Sample 2</u> It is a subsequent event, but doesn't retroactively impact the report. Since the report is to measure liability as at December 31st, 2016, AA should include a note in the report and inform the possibility of future liability increase due to the event.</p>	
Part b: 0.75 point	
<p><u>Sample 1</u> It is a subsequent event as it was first aware between report date and calculation date. It is not a data error, and it happened after calculation date. If IBNR is sufficient, it is the nature of the business, not further action. If IBNR is insufficient, disclose the impact.</p> <p><u>Sample 2</u> This is a subsequent event. If change in claim value is small, IBNR should absorb it and no need to change anything. If the change in reported loss value is large, AA should disclose it.</p>	
EXAMINER'S REPORT	
<p>Candidates were expected to understand the Appointed Actuary's responsibilities related to Subsequent Events, as outlined in the CIA Educational Note, including determining whether an event is defined as a subsequent event under CIA Standards and the AA's appropriate action for each event.</p>	
Part a	
<p>Candidates were expected to describe whether the described event is a subsequent event and how the event should be reported.</p> <p>A common mistake was:</p> <ul style="list-style-type: none"> Stating that no action was required. Since the actual premium liabilities could be materially different from the expected premium liabilities, the AA should disclose information regarding the event as a note to the financial statement. 	
Part b	
<p>Candidates were expected to understand whether the event would impact the entity before or after the calculation date and describe the appropriate action to be taken by the AA.</p> <p>Common errors include:</p> <ul style="list-style-type: none"> Stating that the event impacted the entity as at calculation date or stating that it was a data error. 	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- Stating that the AA should include the large change in value in the calculation.
- Not fully discussing different actions of AA dependent on whether IBNR is sufficient or not.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 29	
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE(S): D1
SAMPLE ANSWERS	
Part a: 0.75 point	
<p><u>Sample 1</u></p> <ul style="list-style-type: none"> • Death • Appointment revoked • Resignation from position <p><u>Sample 2</u></p> <ul style="list-style-type: none"> • Dies • Resigns • Ceases to be an actuary 	
Part b: 0.5 point	
<p><u>Sample 1</u></p> <p>Yes, under 2 conditions:</p> <ol style="list-style-type: none"> 1. Audit committee needs to send a letter to the Superintendent stating that it is satisfied that the current CFO will be able to do both jobs independently 2. Superintendent has to approve the appointment <p><u>Sample 2</u></p> <p>It is possible:</p> <ul style="list-style-type: none"> • The audit committee will need to write to Superintendent that it is confident that CFO can take on both roles adequately and independently with no conflict of interest. The audit committee must seek approval from Superintendent. • Superintendent approves 	
Part c: 1 point	
<p><u>Sample 1</u></p> <ol style="list-style-type: none"> i. The AA shall meet with the directors at least once a year to discuss the financial condition of the company as well as the future financial health of the company (DCAT) ii. The AA shall send an email to the CFO and CEO if he finds an event that could potentially harm the financial health of the company. If proper actions are not taken, the AA shall send a letter informing the Superintendent and send a copy to the Board. <p><u>Sample 2</u></p> <ol style="list-style-type: none"> i. AA must report to the Board at least once a year on the current and future financial condition of the company ii. AA must notify officers of any situation that could have a material adverse impact on the financial health of the company. AA should give a date at which corrections must have been made and if corrections are not made, AA must notify Superintendent. <p><u>Sample 3</u></p>	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

- i. AA must report to directors his assessment on policy liabilities and future financial condition of the company; as well as render opinion on the current and future financial condition of the company
- ii. AA must report to CEO and CFO any matters that have a material adverse impact on company's financial conditions and that require rectification. AA needs to provide actions that must be taken to address these issues. Should no suitable actions be taken according to AA, must inform Superintendent and advise the officers that he/she has done so.

EXAMINER'S REPORT

Candidates were expected to describe the major responsibilities of the actuary.

Part a

Candidates were expected to identify three reasons why an actuary would cease to hold position of AA.

Common mistakes include:

- Identifying reasons that would not necessarily result in an actuary ceasing to hold position of AA, such as:
 - Loss of FCAS credential

Part b

Candidates were expected to discuss the circumstances under which the CFO could hold the position of AA and CFO simultaneously.

Common mistakes include:

- Not providing enough of a description, such as:
 - Not mentioning the audit committee duties
 - Failing to mention that OSFI must approve the appointment

Part c

Candidates were expected to distinguish the AA's reporting duties between the directors of the company (Board) and the officers (CEO/CFO).

Common mistakes include:

- Mixing up the AA's reporting responsibilities to the Board with that to the officers and vice versa.
- Not providing enough description.
- Providing an inaccurate description of the AA's duty to report to the Board and the officers.
- Writing the same answer for each subpart.

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 30	
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE(S): D1
SAMPLE ANSWERS	
Part a: 0.5 point	
<p><u>Sample 1</u> An omission, understatement or overstatement is material if it could materially impact the user's decision making or expectations.</p> <p><u>Sample 2</u> Materiality is a defined threshold that is the minimum deviation required to change the decision of the individual considering the work.</p>	
Part b: 0.75 point	
<p>i. Any one of the following: statutory surplus, the solvency benchmark ratio, MCT ratio, regulatory capital</p> <p>ii. Any one of the following: net worth, net income, earning per share</p> <p>iii. Any once of the following: net income, net capital, net surplus</p>	
Part c: 1 point	
<p>Any four of the following:</p> <ul style="list-style-type: none"> • Size of the company or scale • Entity's access to capital • Stage of organizational life cycle • Type of business/ risk exposure • Net retention • Financial strength of the entity or capital available 	
EXAMINER'S REPORT	
<p>Candidates were expected to understand the definition of materiality, identify the financial metrics that the materiality level could be based on dependent on the purpose of the report and to identify characteristic of an entity that may affect the materiality level.</p>	
Part a	
<p>Candidates were expected to be able to describe the concept of materiality.</p> <p>A common mistake was:</p> <ul style="list-style-type: none"> • Providing an incomplete definition. 	
Part b	
<p>Candidates were expected to identify financial metrics that could be used to set the materiality level under the following three intended uses: regulatory or solvency, appraisal work and general financial statement work.</p>	

EXAM 6C FALL 2017 SAMPLE ANSWERS AND EXAMINER'S REPORT

Common errors include:

- Part i: answering asset or liability
- Part ii: answering asset
- Part iii: answering GWP, asset or liability

Part c

Candidates were expected to identify characteristics of the entity that affects materiality level.

Common errors include answering the following:

- Location
- Diversification
- Current reserve level
- Investment portfolio characteristics
- Underwriting cycle