

Exam 6C



CASUALTY ACTUARIAL SOCIETY
AND THE
CANADIAN INSTITUTE OF ACTUARIES



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Exam 6-Canada

Regulation and Financial Reporting (Nation Specific)

April 28, 2015

4 HOURS

INSTRUCTIONS TO CANDIDATES

1. This 73 point examination consists of 34 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. 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 specific number of items is requested, do not offer more items than the number requested. For example, if three items are requested, 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.
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.

CONTINUE TO NEXT PAGE OF INSTRUCTIONS

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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 May 15, 2015.

END OF INSTRUCTIONS

EXAM 6 – CANADA, SPRING 2015

1. (1 point)

a. (0.5 point)

Briefly describe two ways that Canadian insurance legislation promotes solvency.

b. (0.5 point)

Identify two insurance contract matters under Canadian provincial jurisdiction.

CONTINUED ON NEXT PAGE

EXAM 6 – CANADA, SPRING 2015

2. (1.5 points)

a. (0.5 point)

Briefly describe the two mandates of the Canadian Council of Insurance Regulators.

b. (1 point)

Describe two significant implications of the Dodd-Frank Wall Street Reform and Consumer Protection Act on the insurance industry in the United States.

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EXAM 6 – CANADA, SPRING 2015

3. (4.5 points)

Identify and briefly describe the six approaches to rate regulation. Provide an example of each approach if it is used in Canada.

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EXAM 6 – CANADA, SPRING 2015

4. (2 points)

a. (1.5 points)

Identify and describe two items that should be included in the design of a Risk Appetite Framework.

b. (0.5 point)

Identify two functions of the Chief Risk Officer.

CONTINUED ON NEXT PAGE

5. (2.5 points)

An insured suffered severe brain injuries in a car accident as a result of another driver's negligence and will no longer be able to work. The insured's future income is estimated to be \$2 million.

a. (0.5 point)

Describe how the cap established by Supreme Court of Canada in the Trilogy cases will be applied in the situation described above.

b. (0.75 point)

Identify three rationales behind the establishment of the cap in part a. above.

c. (0.75 point)

Briefly discuss three of the arguments presented in the case of Lee v. Dawson that support the removal of the cap.

d. (0.5 point)

Briefly discuss the two arguments used by the British Columbia Court of Appeal to uphold the cap.

EXAM 6 – CANADA, SPRING 2015

6. (2 points)

An insurer is considering using aggregate credit scores by postal code to price policies for property insurance. Discuss four aspects the insurer needs to consider before adopting the use of credit scores.

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EXAM 6 – CANADA, SPRING 2015

7. (1 point)

a. (0.25 point)

Briefly discuss whether a life insurance policy is considered an indemnity policy.

b. (0.5 point)

Identify two conditions that an insured must establish to be entitled to recovery under an indemnity insurance contract.

c. (0.25 point)

Briefly describe how a “valued policy” differs from a typical insurance policy.

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EXAM 6 – CANADA, SPRING 2015

8. (1.25 points)

In the case of *Sansalone v. Wawanesa Mutual Insurance Co.*, Wawanesa denied coverage to Sansalone.

a. (0.75 point)

Describe how the judge writing for the majority interpreted “intention to cause injury.”

b. (0.5 point)

Discuss why the dissenting minority decision sided with the plaintiff.

CONTINUED ON NEXT PAGE

9. (2.75 points)

There are various compensation systems associated with motor vehicle insurance.

a. (0.5 point)

Describe the threshold system.

b. (1 point)

Briefly discuss four rationales behind the threshold system.

c. (0.75 point)

Briefly describe the three types of threshold systems.

d. (0.5 point)

Briefly discuss which type of system described in part c. above is considered the most efficient in North America.

10. (2 points)

The doctrine of joint and several liability plays an important role in property and casualty insurance.

a. (0.5 point)

Explain this doctrine.

b. (1 point)

Briefly describe an advantage or disadvantage of this doctrine from the perspectives of:

- i. Defendant
- ii. Plaintiff
- iii. Insurers
- iv. Trial Lawyers

c. (0.5 point)

Briefly describe two proposed modifications to this doctrine.

11. (2.5 points)

a. (1 point)

Fully describe how the concept of “bundled” flood insurance is used in the United Kingdom model and how costs are spread across insureds and perils.

b. (1.5 points)

Using the United Kingdom flood insurance model, briefly describe two responsibilities of each of the following:

- i. Insurance company
- ii. Government
- iii. Insured

12. (0.5 point)

An insurance market has designed an automobile risk sharing pool that is expected to operate at a financial profit in order to encourage participation by member insurers.

Assess the sustainability of such a pool.

EXAM 6 – CANADA, SPRING 2015

13. (0.75 points)

An insurer has only one personal property policy and is covered by PACICC. Given the following calculate the reimbursement an insured will receive from PACICC and from the insurer in the event of insolvency:

Unearned premium	\$500
Claim	\$400,000
Deductible per claim	\$1,000
Distribution from insurer	\$350,000

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14. (2 points)

Briefly describe two responsibilities of each of the following in the Production Insurance Program.

a. (0.5 point)

Government of Canada

b. (0.5 point)

Provincial Government

c. (0.5 point)

Canadian Producers

d. (0.5 point)

Private Insurance/Reinsurance Companies

15. (2 points)

Compare private property insurance with the Disaster Financial Assistance Arrangements (DFAA) with respect to the following:

a. (0.5 point)

Funding mechanisms

b. (0.5 point)

Eligibility provisions

c. (0.5 point)

Amount of claim settlement

d. (0.5 point)

Subsidization

16. (3 points)

A provincial government which currently operates a public automobile insurance program is facing rising pressure from its citizens who are demanding more choice for automobile insurance.

a. (1.5 points)

Provide and briefly explain three reasons that support maintaining the current public automobile insurance system.

b. (1.5 points)

Provide and briefly explain three reasons that justify eliminating the public automobile insurance program and opening the market to private insurers.

17. (2.5 points)

a. (0.5 point)

In recent years, increased frequency and severity of catastrophic events have been observed by insurers and reinsurers. Briefly describe one major driver for increased frequency and one major driver for increased severity.

b. (1.5 points)

Identify and briefly describe three factors that will impact the tolerance level on the stressed A.M. Best Capital Adequacy Ratio (BCAR) catastrophe analysis.

c. (0.5 point)

Compare and contrast the approach used to test catastrophe risk under BCAR and Dynamic Capital Adequacy Test.

18. (2.75 points)

a. (1.5 points)

Briefly describe three sound practices for each of the following earthquake model components:

- i. Model version
- ii. Model validation

b. (0.75 point)

Identify three non-modeled exposures or risk factors in an earthquake model.

c. (0.5 point)

Identify one restrictive condition for each of the following financial resources if insurers use them to support their earthquake exposures:

- i. Capital market financing
- ii. Reinsurance coverage

EXAM 6 – CANADA, SPRING 2015

19. (3 points)

A new property and casualty insurance company started writing business on January 1, 2014. It has the following loss information as at December 31, 2014:

	Paid Loss	Case Reserves	Incurred Loss	Ultimate Loss
Gross Layer	\$32,000,000	\$14,000,000	\$46,000,000	\$60,000,000
Ceded Layer	\$12,000,000	\$6,000,000	\$18,000,000	\$26,000,000

- Discount rate (gross and ceded) 5%
- The gross unpaid claims discounted at 5% (excluding PfAD) \$26,804,722
- The ceded unpaid claims discounted at 5% (excluding PfAD) \$13,402,361
- MfAD for investment return rate (gross and ceded) 1%

Cumulative Accident Year Payment Pattern for all layers:

- Percentage paid by 12 months: 50%
- Percentage paid by 24 months: 80%
- Percentage paid by 36 months: 100%

Assume that all payments are made in the middle of the year. The same Margin for Adverse Deviation (MfAD) for claims development is used for both gross and ceded layers.

The following additional information is provided:

- The Unpaid Claims and Adjustment Expenses from page 20.20 are \$28,374,091.
- The Unpaid Claims and Adjustment Expenses Recoverable from Reinsurers from page 20.10 are \$12,377,727.
- The booked claim liabilities match the actuary's estimate.
- All business is ceded to a single reinsurer with an A.M. Best financial strength rating of C.

<< QUESTION 19 CONTINUED ON NEXT PAGE >>

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EXAM 6 – CANADA, SPRING 2015

(19 cont.)

a. (2 points)

Calculate the MfAD for recovery from reinsurance ceded used to determine the Unpaid Claims and Adjustment Expenses Recoverable from Reinsurers.

b. (0.5 point)

Evaluate and briefly explain whether the calculated MfAD from part a. above is reasonable.

c. (0.5 point)

This company selected its ceded discount rate to be the same as its gross and net discount rates (its portfolio yield rate). List two other possible sources for the selection of the ceded discount rate.

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20. (2.50 points)

A property and casualty insurance company's bond portfolio as at December 31, 2014 is as follows:

Bond	Market Value	Coupon Rate	Yield to Maturity	Maturity	Duration
A	\$1,014,000	5.00%	2.25%	2015-06-30	0.500
B	\$1,006,000	3.00%	2.40%	2015-12-31	0.993
C	\$986,000	1.50%	2.45%	2016-06-30	1.489

The actuary has calculated the following net undiscounted provisions as at December 31, 2014:

Accident Year	Undiscounted Case Reserves	Undiscounted IBNR
2013	\$500,000	\$250,000
2014	\$1,500,000	\$675,000
Total	\$2,000,000	\$925,000

a. (0.5 points)

Calculate the rate used to discount claim liabilities at December 31, 2014.

b. (0.75 points)

If the undiscounted unpaid liabilities totaled \$5 million, discuss whether the discount rate calculated in part a. above is appropriate.

c. (1.25 points)

Identify five considerations used in determining the expected investment return rate for the calculation of present value.

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21. (1.25 points)

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

Paid during calendar year:

Accident Year	Calendar Year 2012	Calendar Year 2013	Calendar Year 2014
2012	88,000	25,000	8,500
2013		86,000	25,750
2014			92,500

Discounted Claim Liabilities at the end of each calendar year:

Accident Year	Calendar Year 2012	Calendar Year 2013	Calendar Year 2014
2012	103,100	66,625	56,750
2013		108,600	77,900
2014			126,600

Other information:

- Annual investment yield for calendar year 2013 is 3.0%.
- Annual investment yield for calendar year 2014 is 2.8%.

Calculate the discounted excess or deficiency ratio found on the P&C-1 page 60.41 for accident year 2012 as at December 31, 2014.

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EXAM 6 – CANADA, SPRING 2015

22. (1 point)

The following information is available from the December 31, 2014 P&C-1 of a property and casualty insurance company. All amounts are in thousands of dollars (\$000s).

	2014	2013
Net unpaid claims and adjustment expenses	181,000	183,000
Net unearned premiums	61,500	55,500
Unearned commissions	0	0
Premium deficiency	0	0
Deferred policy acquisition expenses	7,500	6,750
Instalment premiums	54,000	48,000
Receivables from policyholders	8,000	7,500
Payables to policyholders	6,000	15,000
Total equity	82,500	67,500
Net investment income	10,000	10,000

Investment yield: 3.50%.

Calculate the Net Investment Income from Insurance Operations.

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EXAM 6 – CANADA, SPRING 2015

23. (5.75 points)

The following information is available from an insurance company as of December 31, 2014. All amounts are in thousands of dollars (\$000s).

Capital Available	(\$000s)
Common Shares	20,000
Contributed Surplus	2,500
Retained earnings	4,500
Accumulated net after-tax fair value gains (losses) arising from changes in the company's own credit risk	3,000
Accumulated other comprehensive income (loss)	4,000
Earthquake reserves	2,000
Earthquake Premium Reserves (EPR) not used as part of financial resources to cover exposure	1,000
Category B instruments	12,000
Category C instruments	2,000
Interests in joint ventures with more than 10% ownership	2,500
Loans considered as capital to associates	2,000
Intangible assets, including computer software (net of eligible deferred tax liability)	500

Other selected information in the Capital Required at Target:

Capital Required at Target	(\$000s)
Premium liabilities and unpaid claims	???
Catastrophes	5,000
Reinsurance ceded to unregistered insurers	???
Market risk margin	8,000
Credit risk margin	6,000
Operational risk margin	???

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EXAM 6 – CANADA, SPRING 2015

(23 cont.)

Reinsurance Ceded to Unregistered Reinsurers

Name of Assuming Reinsurer	Unearned Premium Ceded to Assuming Insurer (\$000s)	Outstanding Losses Recoverable from Assuming Insurer (\$000s)	Receivable from Assuming Insurer (\$000s)	Payable to Assuming Insurer (\$000s)	Non-Owned Deposits Held as Security from Assuming Insurer (\$000s)	Letter of Credit Held as Security from Assuming Insurer (\$000s)
KLM Re	7,000	5,000	2,000	4,000	9,000	3,000

Line Specific Information

Line of business	Net Premium Liabilities Excl. PfAD (\$000s)	Net Unpaid Claims Excl. PfAD (\$000s)	Risk Factor for Premium Liabilities	Risk Factor for Unpaid Claims
Personal Property	20,000	50,000	20%	15%
Auto - Liability	55,000	70,000	15%	10%

Line of business	Direct Written Premium in the Past 12 Months (\$000s)	Premiums Assumed in the Past 12 Months (\$000s)	Premiums Ceded in the Past 12 Months (\$000s)	Premium Growth in the Past 12 Months
Personal Property	80,000	18,000	8,000	10%
Auto - Liability	100,000	21,000	30,000	5%

<< QUESTION 23 CONTINUED ON NEXT PAGE >>

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(23 cont.)

Other Information

- All non-owned deposits are AAA bonds redeemable in less than a year. They are subject to a capital factor of 0.25%.
- Letters of credit held as security from assuming unregistered reinsurers are subject to a capital factor of 0.5%.
- The company's only unregistered reinsurer is KLM Re.
- The company's only lines of business are Personal Property and Auto – Liability.
- For the purpose of calculating the operational risk, the insurance company does not have intra-group pooling arrangements and the following risk factors apply:

Base Capital Factor	Direct Written Premium	Assumed Written Premium	Ceded Written Premium	Growth in Premium
8.5%	2.5%	1.75%	2.5%	2.5%

- There is no phase-in adjustment for capital available or for capital required.
- a. (1.25 points)
Calculate the Capital Available.
 - b. (1.5 points)
Calculate the Capital Required at Target for insurance risk.
 - c. (1 point)
Calculate the Capital Required at Target for operational risk.
 - d. (1 point)
Calculate the reduction in Capital Required at Target for excess collateral for reinsurance ceded to unregistered reinsurer.
 - e. (1 point)
Calculate the MCT ratio.

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24. (2 points)

The following information is available from the December 31, 2014 P&C-1 of a property and casualty insurance company. All amounts are in thousands of dollars (\$000s).

PREMIUMS AND CLAIMS (60.20) - Total all lines of business

Premiums written less return premiums - Direct	235,000
Premiums written less return premiums - Assumed	150,000
Premiums written less return premiums - Ceded	155,000
Net unearned premiums at beginning of year	105,000
Net unearned premiums at period end	115,000
Claims incurred including adjustment expenses - Direct	165,000
Claims incurred including adjustment expenses - Assumed	105,000
Claims incurred including adjustment expenses - Ceded	125,000

COMMISSIONS (80.10) - Total all lines of business

Total Gross Commissions (line 39)	65,000
Total Ceded Commissions (line 49)	35,000

STATEMENT OF INCOME (20.30)

Acquisition Expenses - Taxes (line 12)	7,000
Acquisition Expenses - Other (line 14)	8,500
General Expenses (line 16)	12,500
Investment Operations - Income (line 32)	14,000
Investment Operations - Realized Gains (Losses) (line 33)	4,500
Investment Operations - Expenses (line 34)	500
Other Revenues (line 44)	800

- The income tax rate is 22.0%.
- Assume there is no premium deficiency.

<< QUESTION 24 CONTINUED ON NEXT PAGE >>

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EXAM 6 – CANADA, SPRING 2015

(24 cont.)

Calculate the following:

a. (0.75 point)

Net loss ratio

b. (0.50 point)

Net combined ratio

c. (0.75 point)

Net income

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EXAM 6 – CANADA, SPRING 2015

25. (2 points)

The following is a partially completed Unpaid Claims and Loss Ratio Analysis Exhibit for a property and casualty insurance company as at December 31, 2014:

Accident Year (1)	Paid Loss Cumulative (3)	Total Undiscounted Unpaid Claims and Adjustment Expense (6)	Present Value of Unpaid Claims and Adjustment Expenses - Total (7)	PfAD Claims (8)	PfAD Reinsurance (10)	PfAD Interest Rate (11)
2013	\$345,000	\$155,000	\$152,470	\$12,198	0	\$623
2014	\$170,000	\$405,000	\$396,539	\$31,723	0	\$2,075

Accident Year (1)	Discounted Reserves including PfAD (12)	Earned Premiums (13)	Investment Income from UPR (14)	Cum. Investment Income from Unpaid Claim Reserves (15)	Loss Ratio Undiscounted (16)	Loss Ratio Discounted (17)
2013	\$165,290	\$760,000	\$11,400	A	C	E
2014	\$430,337	\$850,000	\$12,750	B	D	F

Additional information is also available:

- Assume there is no reinsurance.
- Investment yield for 2013 and 2014: 3%.
- Accident year 2013 reserves discounted with Provision for Adverse Deviation (PfAD) as at December 31, 2013 were equal to \$371,896.

Determine each of the following amounts: A, B, C, D, E and F.

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EXAM 6 – CANADA, SPRING 2015

26. (2.5 points)

A property and casualty insurance company has the following ratios as at December 31, 2014:

• Return on equity (using year-end 2014 Equity)	11.6%
• Return on revenue	6.5%
• Return on assets (using average assets)	6.1%
• Liabilities as a percentage of liquid assets	142%
• Net loss reserves to equity	36%
• Net underwriting leverage ratio	60%

Other financial information for 2014 (all amounts are in thousands of dollars (\$000s)):

• Net premium earned	93,600
• Liquid assets	128,000
• Net income	19,970
• The company has no capital required for catastrophes or reinsurance ceded to unregistered insurers.	

a. (1 point)

Calculate the total non-liquid assets for the company as at December 31, 2014.

b. (1 point)

Comment on the financial health of the company based on the liabilities as a percentage of liquid assets ratio and the net underwriting leverage ratio.

c. (0.5 point)

Contrast return on equity and return on revenue in terms of what they are intended to measure.

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EXAM 6 – CANADA, SPRING 2015

27. (1.5 points)

A risk transfer test is being conducted on a quota share reinsurance contract with the following characteristics:

Inception Date	January 1, 2014
Cession	75.0%
Ceding Commission	10.0%
<u>Profit Commission</u>	
Loss Ratio	65.0%
Profit Swing	5.0%
<u>Reinsurers Expenses as a % of Premium</u>	
Brokerage	1.5%
Operating Expenses	2.0%
Fees related to letters of credit	0.5%

The Expected Reinsurer Deficit (ERD) risk measuring method is used in determining whether there is risk transfer in a reinsurance contract.

a. (0.5 point)

Describe the two conditions required for a contract to receive reinsurance accounting treatment.

b. (0.5 point)

Describe how the profit commission should be incorporated into the ERD method.

c. (0.25 point)

Briefly describe the impact the reinsurer's expenses will have on the ERD calculation.

d. (0.25 point)

Given an ERD of 2.5%, determine whether the contract is considered to exhibit risk transfer.

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EXAM 6 – CANADA, SPRING 2015

28. (2.25 points)

The following information is given for a Canadian property and casualty insurance company as at December 31, 2014. All amounts are in thousands of dollars (\$000s).

Line of Business	Net Unearned Premium Reserve	Selected Loss Ratio
Auto (excl. Facility Association)	5,000	70%
Personal Property	1,000	80%
Facility Association	500	95%

Selected Maintenance Expense Ratio of Premium	2.5%
Selected Internal Adjustment Expense Ratio of losses	5.0%
Selected Contingent Commission Ratio of Premium	6.0%
Unearned Commissions	200
Deferred Policy Acquisition Expenses	1,100

Loss ratios are discounted according to accepted actuarial practice in Canada.

Determine the Deferred Policy Acquisition Expenses that the company will be allowed to book on its financial statements. Fully support your answer.

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EXAM 6 – CANADA, SPRING 2015

29. (3 points)

The results as of December 31, 2014 for the three most adverse scenarios for two automobile insurance companies' Dynamic Capital Adequacy Testing (DCAT) are shown below. Both companies are federally-regulated Canadian property and casualty insurers. Assume the Minimum Capital Test (MCT) ratios and equity shown below reflected the most adverse results during the forecast period.

Company A	Base Scenario	Frequency/Severity (Catastrophic event)	Premium Volume (Decrease)	Government and Political Risk
MCT Ratio	140%	125%	105%	120%
Equity (\$000s)	\$400,000	\$300,000	\$224,000	\$280,000

Company B	Base Scenario	Increase in Social Inflation	Premium Volume (Decrease)	Government and Political Risk
MCT Ratio	170%	120%	110%	97%
Equity (\$000s)	\$500,000	\$350,000	\$300,000	\$265,000

	Company A	Company B
Main region of operation	Quebec	Ontario
Litigation environment in region	No-fault	Threshold no-fault

a. (1 point)

Discuss whether or not each company's financial condition is satisfactory.

b. (0.5 point)

Briefly describe one adverse scenario under the Government and Political Risk scenario that might be applicable to both companies and one that might be applicable only to company B.

c. (1 point)

Define social inflation and briefly describe how different this risk can be for the two companies with respect to the current automobile litigation environment in each province.

d. (0.5 point)

Briefly describe one ripple effect and one management action that may be considered under the Government and Political Risk scenario.

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30. (2.25 points)

A company is considering two different investment strategies:

- Strategy A: buy only high yield bonds
- Strategy B: buy only low yield bonds

The following information is given:

	Strategy A	Strategy B
Asset duration	4 years	3 years
Liability duration	2 years	2 years
Coverage Ratio	60%	60%
Interest rate movement in runoff period	100 basis points	100 basis points
Discount rate based on portfolio	4%	3%
Credit Risk Margin	100 basis points	50 basis points
Discount rate including the interest rate margin	?	1.9%

In addition, assume the following:

- For determining the timing risk margin, the duration of liabilities is shortened by 10%.
- Investment expenses are 0.

a. (1.25 points)

Calculate the discount rate including the interest rate margin for Strategy A using the explicit quantification method.

b. (0.5 point)

Provide two reasons for preferring Strategy A.

c. (0.5 point)

Provide two reasons for preferring Strategy B.

31. (1.5 points)

Contrast the following accounting concepts:

a. (0.5 point)

Liquidation vs. going concern

b. (0.5 point)

Fair value vs. historical cost

c. (0.5 point)

Principle-based vs. rule-based

32. (3.25 points)

A federally regulated property and casualty insurance company's Appointed Actuary (AA) suddenly chooses to retire near the end of the financial year. The Chief Financial Officer (CFO) who is a Fellow of the Canadian Institute of Actuaries (FCIA) immediately begins the year-end valuation process and starts preparing the Appointed Actuary's report.

a. (1 point)

Fully describe the requirements for the CFO to legally become the AA.

b. (0.5 point)

Discuss whether or not the regulator should accept the new appointment.

c. (1 point)

Identify four disclosures required by an AA in his report as a consequence of being newly appointed.

d. (0.75 point)

Other than resigning, identify three reasons for which a person could cease to hold the office of the actuary of a company.

33. (1 point)

a. (0.5 point)

Describe the concept of materiality.

b. (0.5 point)

Identify two considerations in the determination of materiality.

EXAM 6 – CANADA, SPRING 2015

34. (1.75 points)

a. (0.75 point)

Briefly describe the three objectives of the Office of the Superintendent of Financial Institutions (OSFI) in requiring peer review of the work of the Appointed Actuary.

b. (1 point)

The peer reviewer is expected to review the appropriateness and extent of internal and external material changes affecting the valuation of policy liabilities and ceded reinsurance assets. Identify four examples of material changes that the reviewer should consider.

END OF EXAMINATION

Exam 6C

Regulation and Financial Reporting (Nation Specific)

POINT VALUE OF QUESTIONS

QUESTION	VALUE OF QUESTION	SUB-PART OF QUESTION						
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	1.00	0.50	0.50					
2	1.50	0.50	1.00					
3	4.50	4.50						
4	2.00	1.50	0.50					
5	2.50	0.50	0.75	0.75	0.50			
6	2.00	2.00						
7	1.00	0.25	0.50	0.25				
8	1.25	0.75	0.50					
9	2.75	0.50	1.00	0.75	0.50			
10	2.00	0.50	1.00	0.50				
11	2.50	1.00	1.50					
12	0.50	0.50						
13	0.75	0.75						
14	2.00	0.50	0.50	0.50	0.50			
15	2.00	0.50	0.50	0.50	0.50			
16	3.00	1.50	1.50					
17	2.50	0.50	1.50	0.50				
18	2.75	1.50	0.75	0.50				
19	3.00	2.00	0.50	0.50				
20	2.50	0.50	0.75	1.25				
21	1.25	1.25						
22	1.00	1.00						
23	5.75	1.25	1.50	1.00	1.00	1.00		
24	2.00	0.75	0.50	0.75				
25	2.00	2.00						
26	2.50	1.00	1.00	0.50				
27	1.50	0.50	0.50	0.25	0.25			
28	2.25	2.25						
29	3.00	1.00	0.50	1.00	0.50			
30	2.25	1.25	0.50	0.50				
31	1.50	0.50	0.50	0.50				
32	3.25	1.00	0.50	1.00	0.75			
33	1.00	0.50	0.50					
34	1.75	0.75	1.00					
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	73.00							

EXAM 6C SPRING 2015 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.
- 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.
- Generally, candidates were fairly well prepared for this exam. However, candidates should be cautious of relying solely on study manuals, as some candidates lost credit for failing to provide basic insights that were contained in the syllabus readings.
- The sample answer is from a candidate that received full credit for the question. If there are multiple answers that receive full credit, more sample answers are included.

EXAM STATISTICS:

- Number of Candidates: 96
- Available Points: 73
- Passing Score: 50.75
- Number of Passing Candidates: 44
- Raw Pass Ratio: 45.83%
- Effective Pass Ratio: 50.00%

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 01	
TOTAL POINT VALUE: 1	LEARNING OBJECTIVE: A1 for both parts
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.5 point	
<p>Any two of the following received full credit:</p> <ul style="list-style-type: none"> • By controlling the creation of domestic insurers and licensing foreign insurers • By limiting the types of investments insurers could make • By providing for the periodic filing of financial information • By giving a government department authority to ensure compliance • Creation or recognition of rating bureaus to improve the actuarial soundness of underwriting decisions • In the case of a few provinces, the creation of administrative boards to encourage minimum or adequate rates which were reasonable and non-discriminatory • Impose requirements for entering the insurance market • Company are required to file MCT and DCAT which help assessing the financial soundness of the company • Control the investment activities of the insurers. 	
Part b: 0.5 point	
<p>Any two of the following received full credit:</p> <ul style="list-style-type: none"> • Contents of insurance policy • Insurable interest • Contract taking effect • Payment of premiums • Duty to disclose • Incontestability • Reinstatement • Designation of beneficiaries • Insured dealing with the contract • Policy terms • Contract provisions 	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<ul style="list-style-type: none"> • Candidates performed much better on part A than part B 	
Part a	
<ul style="list-style-type: none"> • - • Most candidates received full credit for this part. Candidates who do not receive full credit were able to only identify one item. For candidates who put filing of MCT and filing of DCAT as two separate items, we considered as only one item as they are both relating to accessing the financial soundness of the company. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b
<ul style="list-style-type: none">• The most common error is to provide Insurance transaction matters instead of insurance contract matters. Some candidates answered policy wording instead of policy contents or policy terms. Others provided examples of contracts like auto policy or home policy.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 2	
TOTAL POINT VALUE: 1.50	LEARNING OBJECTIVE: A1
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.50 point	
Candidate needed to provide an element from each axis to receive full credit.	
<ol style="list-style-type: none"> 1) Legislation axis <ol style="list-style-type: none"> a. Drafting legislation b. To ensure adequacy of provincial regulation c. Promote consistency of insurance regulation among provinces d. improve efficiency of canadian insurance regulation e. discuss matters related to insurance regulation f. Review legislations or Study proposed legislation 2) Practices axis <ol style="list-style-type: none"> a. Encourages uniform practices in the industry (such as common industry wide rules, teaching and testing materials for licensing of insurance agents) b. Provide education c. Consumer Protection d. Promote transparency to the public e. Fair treatment of policyholders f. Provide the public with information about their insurance policies 	
Part b: 1.00 point	
Any two of the following received full credit:	
<ol style="list-style-type: none"> a. Establishes the Federal Insurance Office charged with studying and collecting information on the insurance industry and the rate insurance regulatory system, and drafting a proposed federal insurance regulatory framework b. Establishes the Financial Stability Oversight Council which monitors the financial services markets, including the insurance industry, to identify potential risks to the financial stability of the United States c. Financial Stability Oversight Council (FSOC) is authorized to require a state insurance regulator to either apply new or heightened financial standards on insurance companies, or explain to the FSOC in writing why the regulator chose not to apply such standards d. FSOC may declare that a nonbank financial company, including an insurance company under certain circumstances – poses a systematic risk such that it is subject to supervision by the US Federal Reserve System e. Requires single-state regulation of surplus lines insurance placements and requires all states to apply uniform eligibility criteria for surplus lines insurers f. Mandates certain requirements for reinsurance credits and generally preempts non-domiciliary state laws to insurers with respect to certain reinsurance issues. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT (BY PART, AS APPLICABLE)
Candidates generally performed well on this question. For part a, most candidates received partial credit, but few received full credit.
Part a
<p>The expectations were that the candidate should at least be able to discuss one element of the “legislation axis” part of the CCIR mandate.</p> <p>Most candidates that didn’t get full marks either mentioned that CCIR mandate was to write the P&C 1 instructions or solvency. As CCIR is a committee of insurance legislators, some candidates confused the mandate of the CCIR with the mandate of its members and OSFI. Also no credits were awarded for just stating “solvency” or “federal or provincial regulations”. So no mark for anything specifically related to P&C 1, the mandate is larger than just that.</p> <p>The other part we were looking for was “uniform practices”. We gave credits to candidates that provided answers along this line.</p> <p>Providing an element from both the legislation axis and the practices axis yielded full marks.</p> <p>We didn’t give additional credit to candidates that repeated a legislation element or a practices element, i.e Draft legislation. More uniform legislation across provinces would yield only partial credits.</p>
Part b
Most candidates knew at least two of the consequences. A common mistake was to say that federal legislation of insurance was ultra vires.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 3	
TOTAL POINT VALUE: 4.5	LEARNING OBJECTIVE: A2
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 4.5 points	
<ol style="list-style-type: none"> 1. Open competition No filing required. Like in Nunavut, Yukon 2. Use and file Use the rates and inform regulators who can review & even retroactively correct during a certain period. Like in Quebec 3. File and use File the rates & regulators have a period to approve otherwise its correct to use. Like in PEI 4. Flex rating Means that changes within a certain range can be implemented & used. Not in Canada 5. Prior Approval Means that cannot use rates before approval of government. Like in Ontario for major filings 6. Government mandated rates The government can mandate the rates or the rate change like in Alberta with grid & industry wide rate change 	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Part a	
<ul style="list-style-type: none"> • Candidates are expected to know the rate regulations in Canada Generally candidates did reasonably well on this question. Most candidates cannot name the flex rating approach. For the candidates who can named the flex rating approach, a lot of them cannot give the definition and example. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 04	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE: A2 for both parts
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 1.5 points	
Candidates that identified the two items and described two elements for each received full credit:	
<ul style="list-style-type: none"> • Risk appetite statement <ul style="list-style-type: none"> ○ Should reflect the aggregate level of risk ○ Should reflect type of risk that a FRFI is willing to accept in order to achieve its business objectives ○ Should be linked to the firm's short-term and long-term strategic, capital and financial plans ○ Should include qualitative and quantitative measures that can be aggregated and disaggregated ○ Should be forward looking ○ Should be normal and stressed scenarios ○ Should aim to be within the FRFI'S risk capacity • Risk limit/Risk tolerance is the allocation of the FRFI's risk appetite statement to <ul style="list-style-type: none"> ○ Specific risk categories ○ Business unit or platform level ○ Bines of business or product level ○ More granular levels, as appropriate 	
Part b: 0.5 point	
Any two of the following received full credit:	
<ul style="list-style-type: none"> • identifying, measuring, monitoring and reporting on the risks of a FRFI • provide regular reports to the board, risk committee and senior management • provide objective view to the risk committee and the board • meet with risk committee or board on a regular basis • should have processes and controls in place to assess the accuracy of any risk information or analysis provided by business lines • Oversight the risk management of the company • Implement the risk management policy of the company 	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<ul style="list-style-type: none"> • The candidates should understand the general idea behind the Risk Appetite Framework and should know what are the functions of a CRO. • Candidates performed poorly on this question, commonly confusing the concepts of risk appetite framework and risk limits. • Candidates performed much better on part B than part A 	
Part a	
<ul style="list-style-type: none"> • The most common errors were: <ul style="list-style-type: none"> ○ Candidates described the risk appetite statement and the risk limit but neglected to identify them by name. ○ Candidates focused only on the risk appetite statement and did not mention risk limit. ○ Candidates mixed up the two items. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b
<ul style="list-style-type: none">• The most common error was stating that a CRO approves the risk appetite framework.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 5	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: A3 knowledge statement b
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.5 point	
<ul style="list-style-type: none"> • Cap of \$100,000 as set forth by the Trilogy will be used; the cap will be indexed for inflation and applied on the compensation for his non-pecuniary damages. The cap will provide a rough upper limit to the award of non-pecuniary damage; rough upper limit is \$100k with indexation of inflations. • The cap will only apply to non-economic damages for pain and suffering ,etc. and will not affect the economic damage to compensate for the loss of future income. The cap will impose a maximum of \$100,000 for non-economic damages with indexation considering inflation. 	
Part b: 0.75 point	
<p>Any three of the following received full credit:</p> <ul style="list-style-type: none"> • Extravagant awards will lead to social burden, resulting in availability and affordability issues. • Economic damages are fully compensated. • To ensure predictability and stability of awards. • Claims for pain and suffering of severely injured individuals are virtually limitless. The absence of an appropriate yardstick for awards can lead to inconsistent and wildly extravagant awards. • Non-economic damages are not meant to be compensatory, and should be viewed as additional money to make life more endurable. 	
Part c: 0.75 point	
<p>Any three of the following received full credit:</p> <ul style="list-style-type: none"> • The most important argument is the argument for equity in the context of the Charter <ul style="list-style-type: none"> ○ Cap discriminated against seriously injured victims of negligence as less seriously injured victims were entitled to full compensation for pain and suffering ○ Full compensation was denied to the most seriously injured victims as a result of the cap ○ Seriously injured victims also discriminated when compared to seriously injured victims of other torts where cap does not apply ○ Trilogy predated the Charter and had never been subject to a Charter analysis • Rough upper limit was not a strict rule of law • Considerations contemplated in the trilogy, such as skyrocketing awards and insurance premiums had proven to be false • Upper limit precluded juries from keeping up with the pace of social, economic and technological change in society • Cap is inconsistent with modern community values, which are more accepting of disabilities than previously. • Rough limit disregards juries and the importance of juries outweighs the hypothetical benefits that the guidelines might bestow • Limit constitutes a radical change in the common law contrary to the accepted incremental method of achieving such changes 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

<ul style="list-style-type: none">• Cap produces unjust results for plaintiffs whose situations differ from the plaintiffs in the trilogy• Cap is arbitrary and lacking a logical foundation
Part d: 0.5 point
<ul style="list-style-type: none">• The British Columbia Court of Appeal: Arguments based on Charter were rejected as awards for general damages were never meant to provide full compensation, so it should not be dependent on the seriousness of injury• The British Columbia Court of Appeal: Court recognizes it might be time to rationalize and examine the cap and the submissions seem compelling, but the court of appeal cannot overturn the trilogy
EXAMINER'S REPORT (BY PART, AS APPLICABLE)
<ul style="list-style-type: none">• Candidates were expected to know how Canadian Cap is applied for non-pecuniary general damages.• Most candidates seemed having troubles with part d, failing to identify that it is not up to the court of appeal to overturn the ruling of the trilogy.
Part a
<p>Most candidates did not receive full credit for this part. Common errors include:</p> <ul style="list-style-type: none">• Neglecting to mention inflation indexation of the Cap.• Neglecting to mention the cap should only be applied to non-pecuniary damage.• Some candidates did not mention the application of the cap and instead mentioned that the \$2M future income will not be capped.
Part b
<ul style="list-style-type: none">• Roughly half of candidates got full marks on this part.• Candidates received partial credit for only discussing only one or two rationales.• A few candidates were confused by answering the cap with punitive damage, not general damage and thus losing credits.
Part c
<ul style="list-style-type: none">• Roughly half of candidates got full marks on this part.• Candidates received partial credit typically were able to discuss only one or two arguments.
Part d
<ul style="list-style-type: none">• Very few candidates got full marks on this part• The vast majority failed to mention that the court of appeal cannot overturn the ruling of the trilogy.• Another common mistake was using answers from part b for this part.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 6	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE: A2
SAMPLE ANSWERS	
2 points	
<p>Any four of the following received full credit:</p> <ul style="list-style-type: none">• Credit scores must be up to date and accurate• Lower income individuals generally have worse credit scores. As a result, this practice may be seen as unfairly discriminatory.• Does this practice comply with applicable provincial and federal laws and regulations?• Should analyze information to make sure aggregate credit scores is predictive of the expected losses and distinguishes fairly amongst insureds.• How should postal codes with few exposures be handled? e.g. rural areas may only have a few people in the postal code resulting in the aggregate scores not be representative of a typical residents.• Insurer needs informed consent from the insured to use credit scores for underwriting and pricing.• Insurer cannot decline quoting or refuse to renew a policy based on credit scores.• Insurer cannot decline coverage if the credit score approval is not given by the insured.• Credit scores can be unfairly discriminatory towards certain social groups. e.g. religious groups, young people.• When economic downturn affects the credit scores, must perform a rate differential analysis to ensure the overall premium level still reflect the true expected cost.• The insured must understand that the credit score will be used to set rates.• Credit information must be kept private and confidential.• Ensure not to double count the effect of credit score in the postal code in the territorial differential.• Must allow life changing events to not impact credit scores i.e. identity theft, recent divorce, etc.• Insurer must make sure the credit score does not reflect inquiries about credit score e.g. multiple loan inquiries that affect credit score.	
EXAMINER'S REPORT	
<p>Candidates performed very well on this question. There are numerous sources in the syllabus that discuss the topic of the use of credit scoring in insurance. As such, we accepted all reasonable answers and this produced higher than expected scores.</p> <p>Candidates were expected to know the considerations involved in using credit scores in pricing and/or underwriting. The question specifically asked about issues in using aggregate credit scores. However, we accepted responses that would be applicable to individual credit scores as well.</p>	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 7	
TOTAL POINT VALUE: 1	LEARNING OBJECTIVE: A3
SAMPLE ANSWERS	
Part a: 0.25 point	
Any one of the following responses received full credit:	
<ul style="list-style-type: none"> • A life insurance policy is not considered an indemnity policy because loss of one's life is not capable of translation into a pecuniary loss. • A life insurance policy is not considered an indemnity policy because life insurance is a policy upon a contingency, as death cannot be described as an adverse event. • A life insurance policy is not considered an indemnity policy because it does not compensate for an economic loss. • Not considered an indemnity policy since cannot indemnify the loss of life. • No it benefits survivors but does not compensate for loss. • No because it will not restore something as it was before. • Life insurance is not indemnity. It is a valued policy conditional on the event of death. 	
Part b: 0.5 point	
The optimal solution based on the readings is the following:	
<ul style="list-style-type: none"> • The happening of some event by reason of which the insurer's liability arises and the loss occasioned to the insured by the happening of the event. 	
Other responses accepted are:	
<ul style="list-style-type: none"> • Must suffer a loss and cause of loss must be an insured peril. • Must prove that the insured event occurred and the event caused the insured to suffer a loss. • The covered event must happen and there must be a financial loss associated with that event to the insured. • Insured event has occurred and caused financial loss to insured. • Must prove that insured suffered a financial loss for a covered event under the indemnity contract. 	
Part c: 0.25 point	
Any one of the answers below received full credit:	
<ul style="list-style-type: none"> • A valued policy differs from a normal insurance contract in that the insured does not need to prove the amount of his loss. In this case, a contract has a predetermined indemnity amount which both the insured and the insurer have agreed to. • Valued policy differ as a preset amount is paid when the insured event results in a loss to the policyholder. The payment is not dependent on the actual size of the loss. • Valued policy doesn't need to prove the extent of the loss, just the existence of loss to be entitled to coverage. • A valued policy is an indemnity policy where determining the amount of the loss is replaced with a fixed sum. • The amount recover from loss is predetermined but must still show the loss come from a covered event. • The amount of indemnity of loss is set in advance. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT
<p>The candidate was expected to know the difference between an indemnity and a valued policy.</p> <p>More than 50% of the candidates were not able to explain why a life insurance policy is not an indemnity policy. Most candidates were able to provide at least one condition that an insured must establish to be entitled to recovery under an indemnity insurance contract. Most candidates scored full marks on part c and were able to describe how a valued policy differs from a typical insurance policy.</p>
Part a
<p>The candidate was expected to know that a life insurance policy is not an indemnity policy and provide an explanation. Most candidates knew that a life insurance policy is not an indemnity policy but did not provide sufficient or appropriate explanation as to the reason.</p> <p>Some candidates thought life insurance is an indemnity policy.</p>
Part b
<p>The candidate was expected to know the two conditions that must be established for an insured to be entitled to recovery under an indemnity insurance contract. Most candidates were able to provide one reason. Some candidates provided two conditions that were in effect the same condition stated differently.</p>
Part c
<p>This part was very well answered by most candidates.</p>

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 8	
TOTAL POINT VALUE: 1.25 points	LEARNING OBJECTIVE: A3 – a)
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.75 point	
<p>When the risk of injury is inherent in the insured's deliberate act so that the injury is the natural and probable consequence of the act, the intention to commit the act is the intention to cause the injury.</p> <p>In this case, Sansalone had the intention to commit the act and therefore the intention to cause the injury. The insurer has no duty to defend.</p>	
Part b: 0.5 point	
<p>Sansalone committed an intentional tort without intending to cause injury. Sansalone committed the alleged sexual acts in the negligently-held belief that the victim consented. The duty to defend is separate from the duty to indemnify against damages, and therefore, the insurer has a duty to defend.</p>	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Part a	
<ul style="list-style-type: none"> • For this question, candidates were expected to understand the reasons for the majority decision. • Common errors include the following: <ul style="list-style-type: none"> ○ Not mentioning that the injury is the natural and probable consequence of the act. ○ Not explaining that the intention to commit the act is the intention to commit the injury. 	
Part b	
<ul style="list-style-type: none"> • For this question, candidates were expected to understand the reasons for the minority decision. • Common errors observed include the following: <ul style="list-style-type: none"> ○ Not explaining that there was no intention to cause injury, although there was an intention to cause the act. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 9	
TOTAL POINT VALUE: 2.75	LEARNING OBJECTIVE: A2
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.50 point	
<ul style="list-style-type: none"> • This plan compensates the great majority of cases on an injury basis without regard to fault, but allows those whose losses exceed a specified definition of an injury, or threshold, and who were not responsible for their own injury, to file claims and take legal action against the wrongdoer. • If loss < threshold then the injury system applies loss > threshold then the liability system applies 	
Part b: 1.00 point	
<p>Any four of the following received full credit:</p> <ol style="list-style-type: none"> 1) It offers a compromise: It makes the introduction of injury insurance more palatable by retaining a measure of liability access. 2) Provide justice for the wrongdoer 3) The transaction costs (defense costs) of the tort liability process are theoretically reduced enough to make the overall system affordable. 4) In minor injuries, this system usually limits or eliminates compensation for non-economic losses like "pain and suffering". 5) These savings make it possible to improve compensation for the other more severe and catastrophic cases on a liability basis 6) Quicker settlements and awards for minor injuries 7) In catastrophic cases, the possibility of highly individualized settlements or awards seems more appropriate. 8) Allows for quicker rehabilitation 9) Provide lower rates 10) Losses paid are easier to predict, so easier to rate insurance 11) Discourages malicious behaviors 12) Reduces trial docket pressures as there as less claims filling the courts 	
Part c: 0.75 point	
<ol style="list-style-type: none"> 1) Descriptive basis: Describing in words what type of injuries exceeds the threshold. 2) Monetary basis: Permitting liability claims when the economic loss portion exceeds a specified dollar amount. 3) A combination of descriptive and monetary basis. 	
Part d: 0.50 point	
<p>(Full credit is given for naming the system and provide a reason) Strong descriptive threshold or a combination of both because :</p> <ol style="list-style-type: none"> a. The monetary threshold tend to encourage inflation in awards over time so liability action can be pursued b. Permits fast settlement for minor claims and limits cases that go to court c. More easily interpreted by the courts 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT (BY PART, AS APPLICABLE)
Candidates needed to demonstrate a firm understanding of the concepts related to the threshold system for motor vehicle insurance.
Part a
Candidates did well. Most of them were able to articulate an answer to receive full credit. Many deductions were due to either not giving enough information about how a threshold works or forgotten to mention one of the two compensation systems (above or below the threshold).
Part b
The reference paper does not include specific list of four elements, so we accepted a wide range of pertinent answers. Most deductions were due to candidate repeating the same element in a different wording.
Part c
Most candidates received full credit.
Part d
Most candidates identified the right system but some forgot to support their answer properly.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 10	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE: A4 knowledge statement a
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.5 point	
<ul style="list-style-type: none"> Joint and several liability is a theory of recovery that permits the plaintiff to recover damages from multiple defendants collectively, or from one defendant individually Under the current joint and several doctrine, courts allow the plaintiff to recover all of the damages from one of multiple wrongdoers, even if the party is only partially at fault for the loss. 	
Part b: 1 point	
<p>Full marks require one description for each of four perspectives. Following are samples of accepted answers by perspective:</p> <ul style="list-style-type: none"> Defendant disadvantage – even if the defendant is only partially at fault, they could be held liable for damages disproportionate to their responsibility; fairness issue Defendant - advantage may be able to share burden with other who are also responsible Plaintiff advantage – ensures plaintiff is fully compensated as long as someone with “deep pocket” is in the picture Insurers disadvantage – increase in cost and unpredictability of insuring the defendant companies when there is a possibility of being held responsible for more damages than responsibilities Trial Lawyers advantage – increases efficiency in the legal system, it promotes settlements in many cases Trial Lawyers – disadvantage because less cases will go to courts. 	
Part c: 0.5 point	
<p>Any two of the following answers would get full mark:</p> <ul style="list-style-type: none"> replace with the rule of proportionate liability barring application of joint and several liability to recover non-economic damages barring the application to recover from defendants found to be responsible for less than a certain % of a plaintiff's harm Having a fund, similar to PACICC, that pays for lawsuits when the guilty party does not have the ability or coverage to indemnify the injured party. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
	<ul style="list-style-type: none">• Candidates were expected to know the concept of joint and several liability and its implications.• A majority of the candidates got the full mark.
Part a	
	<ul style="list-style-type: none">• Most candidates received full credit. Candidates did not receive full credit due to not capturing both "collectively" and "individually".
Part b	
	<ul style="list-style-type: none">• Most candidates received full credit. Common error is mixing the concept of defendant and plaintiff
Part c	
	<ul style="list-style-type: none">• Most candidates received full credit. Candidates did not receive full credit due to they were only able to name one of the modifications.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 11	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: B1 & B2
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 1 point	
<ul style="list-style-type: none"> • Sample Response #1 <p>UK bundled flood coverage includes flood insurance with the package policy. This reduces adverse selection as costs are spread among all insured, compared to as an optional coverage where only those with the highest risk would purchase. Premiums are risk-based to encourage risk mitigative action.</p> <ul style="list-style-type: none"> • Sample Response #2 <p>Flood insurance is included in homeowners policy with the other basic perils. However might be excluded for high risk. Because of bundled, permits high penetration of flood insurance, which reduce adverse selection. Use risk-based premium, higher risk will pay higher premium and risk-based deductible with higher risk having higher deductible.</p> <ul style="list-style-type: none"> • Sample Response #3 <p>Private insurers combine flood insurance with homeowners insurance. This reduces adverse selection as people with low flood risk may still buy homeowners insurance for other reasons. Policyholders are charged risk based premiums, meaning those at higher risk of flood losses will pay more. This also provides incentive for risk mitigation. There is often a deductible to reduce moral hazard. There is cross-subsidization, as low-risk insureds are slightly over-charged to make it affordable for high-risk insureds. This allows profitable coverage with large market penetration.</p>	
Part b: 1.5 point	
<ul style="list-style-type: none"> • Sample Response #1 <p>i) Insurers calculate insured premiums sell coverage and settle losses, as well as increase insured knowledge about flood risk ii) Government is responsible for hazard-zone identification and discouraging development in flood prone areas iii) Insureds are responsible for paying a portion of costs through premiums and to manage their flood risk.</p> <ul style="list-style-type: none"> • Sample Response #2 <p>i) Establish risk-based premium and deductible, do not offer coverage to high risk to ensure affordable premium for flood. Explain clearly to insured what types of flood damages are covered. ii) Restrict development of property in flood-prone area Increase public awareness of flood damages iii) Mitigate flood damages with structural work on their own</p>	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Communicate with insurer any improvements made to their home to ensure no under-insurance

- Sample Response #3

i) Insurance Company:

- a. Price policies – underwrite and sell the insurance
- b. Pay benefits when losses occur – claims settlement process (efficient)

ii) Government:

- a. Assess flood risk – provide flood maps to help insurers identify which areas are higher risk.
- b. Prevent building in highest risk areas – prevent need to subsidize, going to too large of costs

iii) Insureds:

- a. Pay premiums – must purchase a policy to be insured.
- b. Mitigate risk – participate in flood management practices to reduce losses

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Candidates scored very well on this question and most candidates received full credit.

Part a

The most common errors were:

- An overly brief description of the UK model that only provided one or two brief points, but not enough to earn full credit
- Describing the flood coverage as packaged with automobile insurance rather than other property perils
- Neglecting to provide any response as to how costs are spread across insureds and perils

Part b

The most common errors were:

- Only providing one responsibility instead of two for any of the 3 parties (i., ii., iii.)
- i. Insurance Company
 - Providing responses that were overly vague such as: cooperate with the government
- ii. Government
 - The government does not approve flood rates charged by insurance companies
- iii. Insured
 - stating that the insured should ensure that flood coverage is included within the package policy (this is by default “bundled” into the policy)
 - Providing responsibilities that were not specific to flood insurance model in the question such as; reporting losses, cooperating with the insurance company, etc.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 12	
TOTAL POINT VALUE: 0.5	LEARNING OBJECTIVE: B2
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
<ul style="list-style-type: none">• Sample Response #1• Not sustainable, as profits would be diluted with competing insurers• Would benefit insurer to put worst risks in the risk sharing pool, to receive the benefits of others profitable risks• Eventually everyone would be placing their worst risk in the risk sharing pool, and it will no longer be profitable• Risk sharing pools are only beneficial when the risks submitted by a member are worse than the average risks in the pool <ul style="list-style-type: none">• Sample Response #2 <p>If business can be written at a profit, insurers will keep this business and not cede it to the RSP. Only risks insurer will be willing to cede are the unprofitable ones, so overtime the RSP wouldn't be profitable.</p> <p>This pool isn't sustainable as it won't operate at a profit.</p>	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<p>Candidates scored very well on this question and almost all candidates received full credit. Candidates were expected to be able to describe why a risk sharing pool intended to operate at a financial profit would not be sustainable.</p> <p>A small number of candidates said the pool would be sustainable, but were not able to defend that statement in order to earn any credit. An even smaller portion of candidates who stated that the pool was sustainable received partial credit for their assessment of how the pool would operate, but again were not able to defend that it would be sustainable.</p>	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 13	
TOTAL POINT VALUE: 0.75	LEARNING OBJECTIVE: B3
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
<ul style="list-style-type: none">• Sample Response #1 <p>PACICC Unearned Premium = $500 \times 0.7 = 350$ Unpaid claim = $400,000 - 350,000 = 50,000$ PACICC Unpaid Claim = $50,000 - 1,000 = 49,000$ Receive from insurer = $350,000$ Receive from PACICC = $49,000 + 350 = 49,350$</p> <ul style="list-style-type: none">• Sample Response #2 <p>Maximum payment for unpaid claims for personal property is $300,000$ PACICC payment for unpaid claims = $\min(400,000 - 1,000, 300,000) = 300,000$ The distribution from the insurer will be used to reimburse the PACICC, with the remainder going to the insured. (ie $350,000 - 300,000 - 350$) PACICC for UEP = $\min(700, 0.7 \times 500) = 350$ Therefore Payment from PACICC = $300,350$ Payment from insurer's disbursement = $49,650$</p>	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<p>Candidates scored very well on this question and most candidates received full credit. Candidates were expected to know the unearned premium calculation for PACICC payment, the PACICC payment limit, and apply this knowledge to the information provided in the question.</p> <p>Some candidates interpreted the "Distribution from insurer" as a payment that went directly to the insured, and some interpreted it to mean a payment that went directly to PACICC. Both approaches were given full credit.</p> <p>Common errors were:</p> <ul style="list-style-type: none">• Applying the deductible following the application of the limit• Errors in calculating the amount recoverable for unearned premium	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 14	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE: B2
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a, b, c, d: 0.5 point per part	
<ul style="list-style-type: none"> Sample Response #1 <p>a) Pay a portion of premium. Act as a reinsurer to provincial plans.</p> <p>b) Determine the appropriate premium Adjust losses</p> <p>c) Manage crop normally Pay a portion of premium</p> <p>d) Not involve in production insurance though they might act as reinsurers to provincial plans Provide other coverage like spot-loss hail coverage to producers</p> <ul style="list-style-type: none"> Sample Response #2 <p>a) Approve the provincial programs to ensure consistency Pays a portion of premium and of administrative costs</p> <p>b) Design the program coverage and premiums Responsible for claims handling process</p> <p>c) Manage their crop adequately, and as per any requirement of their insurance policy Pay a portion of premium</p> <p>d) Provide some optional coverages such as spot-loss hail Act as reinsurers to the program</p>	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<p>Candidates scored very well on this question and most candidates received full credit. Candidates were expected to know the responsibilities of four major parties involved in the Production Insurance Program.</p> <p>Of the four parts, part d. Private Insurance/Reinsurance Companies was the most difficult of the responsibilities for candidates to recall as their involvement in the Program is not as integral as that of the governments and producers.</p>	
Part a	
<p>Most candidates received full credit on this part. The most common errors were stating that the Government of Canada:</p> <ul style="list-style-type: none"> Pays claims (they share in terms of paying premiums and administrative costs) Determines the price 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b

Most candidates received full credit on this part.

The most common errors were:

- Vague statements such as: cooperating with other stakeholders
- Stating that the Provincial Government monitors capital requirements for the Production Insurance Program

Part c

Most candidates received full credit on this part.

The most common errors were:

- Vague statements such as: reporting amounts honestly, provide information to other stakeholders, comply with laws, etc.
- Stating that the Canadian Producers estimate the average yield in a normal year

Part d

The majority of candidates received full credit on this part.

The most common errors were stating that the Private Insurance/Reinsurance Companies:

- Provide the Production Insurance Program
- Create insurance policies and or provide claims service for the Production Insurance Program

For this part, some candidates were not able to provide 2 responsibilities

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 15	
TOTAL POINT VALUE: 2	LEARNING OBJECTIVE: B2
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a, b, c, d: 0.5 point per part	
<ul style="list-style-type: none"> Sample Response #1 <p>a) Private prop insurance is funded by premiums received from insureds. DFAA is funded from general revenue of government</p> <p>b) PP insurance is eligible for those who have purchased insurance and sustained a loss. For DFAA losses in excess of \$1 per capita in the provinces determines eligibility.</p> <p>c) Claim settlement in PP insurance is the amount of loss subject to policy limits. For DFAA, settlement is pre-determined and not based on contribution</p> <p>d) In PP insurance, if correct premiums are charged, there is no subsidizing of one group of risks to another. For DFAA, since payments are made more to those at a high risk of disaster, the low risks subsidizes the high.</p> <ul style="list-style-type: none"> Sample Response #2 <p>a) Private property insurance is funded by homeowners who buys insurance, as for DFAA, it is funded by the government, thus by all residents.</p> <p>b) Private property insurance makes provisions and insured homeowners have the right to be compensated when an insured events occurs. As for the DFAA, the provisions are not a legislature, it is just an agreement, thus homeowners may not receive any compensation if government decide to do so.</p> <p>c) Private property insurance pays full amounts according to the contract. As for the DFAA, it pays to provincial government a certain amount per capita depending on the cost per capita the even make occur.</p> <p>d) Little or no subsidization for private property insurance, depending on how it is structured. As for DFAA, full cross subsidization since money came from taxpayer.</p>	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<p>Candidates scored very well on this question and most candidates received full credit. Candidates were expected to be able to compare the key elements of DFAA with private property insurance.</p>	
Part a	
<p>Most candidates received full credit on this part. The most common error was stating that:</p> <ul style="list-style-type: none"> The insurer is responsible for funding some portion of DFAA 	
Part b	
<p>Most candidates received full credit on this part.</p>	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Eligibility provisions could be interpreted to mean circumstances required for a claim to be eligible for payment, or eligibility to obtain coverage in advance of a claim. Both interpretations received full credit provided that sufficient comparison was made between DFAA and personal property insurance.

With respect to claim payment eligibility, the most common errors were stating that:

- All losses are eligible for DFAA payment
- Anyone who needs assistance from DFAA will get it

With respect to eligibility for coverage, the most common errors were stating that:

- There are no eligibility requirement for personal property insurance
- Individuals in high risk zones are not eligible for DFAA

Part c

Most candidates received full credit on this part.

The most common errors were stating that:

- Implying that DFAA covers excess losses (those not covered by private property insurance or other sources, etc.)
- Personal property insurance and DFAA are equivalent
- DFAA has no limits
- Implying a payment a made regardless of loss size

Part d

Almost all candidates received full credit on this part.

For private property insurance, some candidates stated that due to risk-based premiums there is essentially no subsidization, whereas others stated that there is some subsidization that remains. Both responses were given full credit for private property insurance.

The most common error was stating that:

- DFAA is not subsidized

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 16	
TOTAL POINT VALUE: 3	LEARNING OBJECTIVE: B1 & B3
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 1.5 point	
<ul style="list-style-type: none">• Sample Response #1 <ol style="list-style-type: none">1. Compulsory nature of coverage<ol style="list-style-type: none">I. Government may feel obliged to provide coverageII. Insurers should have limited profits from a government guaranteed market2. Convenience<ol style="list-style-type: none">I. Government can appropriate tax funds when in deficit and will already have required systems in place3. Efficiency<ol style="list-style-type: none">I. Government may be able to operate more efficiently than private insurers. <ul style="list-style-type: none">• Sample Response #2 <ol style="list-style-type: none">1. Public insurance is more efficient than private insurance because of coordination with other gov. bodies.2. Public insurance provide social benefits that count not be attained by having private insurers only.3. Because auto insurance is compulsory, the government should operate it to ensure coverage is available for everyone.	
Part b: 1.5 point	
<ul style="list-style-type: none">• Sample Response #1 <ol style="list-style-type: none">1. Excessive profits is not sustainable in a market of private insurers due to competitive forces.2. Efficiency of public program may be overstated as other government departments are performing tasks that insurers would normally perform.3. Private insurers will likely offer more customizable policies in terms of price and coverage. Consumers will have more options and can choose coverage to better meet their needs. <ul style="list-style-type: none">• Sample Response #2 <ol style="list-style-type: none">1. The private market is willing to offer coverage so public insurance is not needed.2. Public insurers are not more efficient -> they use other gov agencies without factoring in those costs.3. Having private insurers in the market will lead to increased competition which will lead to more innovation.	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

Candidates scored very well on this question and most candidates received full credit. Candidates were expected to be able to apply their knowledge of why governments are involved in providing insurance.

Some candidates provided less than the 3 required reasons for either a or b, and therefore were not given full credit for that part.

Part a

Most candidates received full credit on this part

The most common errors were:

- Identifying the reason, but not describing it adequately, such as the following:
 - Efficiency: lower costs
 - It can fill a unmet need

Part b

Most candidates received full credit on this part.

The most common errors were:

- Identifying the reason, but not describing it adequately, such as the following:
 - Provide growth to the economy
- Providing reasons that would not address the rising pressure from its citizens who are demanding more choice, such as;
 - Government run automobile insurance is subsidized by tax revenues
 - Increased profits for private insurers
- Private insurance would increase availability of coverage

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 17	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: C1
SAMPLE ANSWERS	
Part a: 0.5 point	
<p>Candidates received full credit for one of the following for frequency plus one of the following for severity:</p> <ul style="list-style-type: none"> • Frequency: Global warming is contributing to the unprecedented number of severe events occurring worldwide in recent years, contributing to higher frequency. • Severity: Population growth becomes more concentrated in urban and suburban settings, and supply chains increase in complexity. As a result, insurable values are rising rapidly and leading to increased severity. • Frequency: other solutions accepted include changes in weather patterns, climate change. • Severity: other solutions accepted include higher insured values, higher replacement costs. 	
Part b: 1.5 point	
<p>The optimal solution based on the readings is the following:</p> <ul style="list-style-type: none"> • Financial flexibility: companies that are able and willing to replace lost capital immediately following an event will be afforded greater leeway with regard to the disparity in the standard BCAR and the stressed BCAR. • Assessment of historical volatility: in terms of both the balance sheet and operating performance. • Exposure to frequency: those with exposure to more frequent severe events will be afforded less tolerance in the application of the stress test. 	
Part c: 0.5 point	
<p>One similarity and one difference were required to receive full credit. Sample responses include:</p> <ul style="list-style-type: none"> • Similarity: testing multiple events • Difference: different severity threshold/different probability level/different confidence level; BCAR tests second event 	
EXAMINER'S REPORT	
<p>The candidate was expected to know one driver of increased frequency and severity of cat events, the three factors that impact the tolerance level on the stressed BCAR catastrophe analysis and the difference/similarities between BCAR and DCAT with respect to testing catastrophe risk.</p> <p>Overall, candidates did reasonably well on parts a & c and poorly on part b.</p>	
Part a	
<p>The candidate was expected to know one driver of increased frequency and severity of cat events. Overall, candidates did very well on this question. The most common mistake was identifying the driver of increased frequency as the driver for increased severity and vice versa. Some candidates did not identify what the driver impacted in terms of frequency or severity.</p>	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b
<p>The candidate was expected to know the three factors that impact the tolerance level on the stressed BCAR catastrophe analysis.</p> <p>Most candidates scored very poorly on this question. Some candidates were able to identify but not describe the three factors. Some candidates provided three Keys to Strong Catastrophe Risk Management instead of the factors that impact the tolerance level.</p>
Part c
<p>This part was very well answered by most candidates.</p>

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 18	
TOTAL POINT VALUE: 2.75	LEARNING OBJECTIVE: C1 for all parts
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 1.5 point	
Any three of the following received full credit for the discussion of model version:	
<ul style="list-style-type: none"> • Model Versions : <ul style="list-style-type: none"> ○ To counter the inherent uncertainty in models, insurers should consider the use of more than one model ○ Insurers should implement material updates to commercially available models in a timely manner ○ It is expected that within one year of the release of any material change in a model, the revised model will be used, or an explanation provided for why not ○ Insurers are to identify the model(s) and version they are using ○ When an earthquake model has been developed in-house, it is expected to be updated on a regular basis and periodically tested for functionality and comparative PML results against other commercially available models ○ When an earthquake model has been developed in-house, the staff should be qualify to run the model ○ When using vendor software to determine its PML, insurer should understand the model, its purpose, use and limitations ○ Insurers should have qualified staff to run the model. 	
Any three of the following received full credit for the discussion of model validation:	
<ul style="list-style-type: none"> • Model Validation: <ul style="list-style-type: none"> ○ To ensure that the model prudently captures risks based upon actual events ○ If insufficient data exists to validate the model, an alternative but suitable prudent proxy should be employed for validation ○ Using earthquake events in other parts of the world to validate Canada earthquakes ○ Comparing the modeled tail losses to market prices for reinsurance coverage ○ The setting and refinement of model parameters, including for non-modelled risks or costs, should be robust and reflect the results of the model validation process ○ Model validation process should be documented ○ Any limitations of the model or the data should be clearly identified 	
Part b: 0.75 point(s)	
Any three of the following received full credit:	
<ul style="list-style-type: none"> • Exposure growth between the date of the data and the end of the relevant period of exposure • Contingent business interruption • Auto and marine insurance • Claims handling expenses • Adequacy of insurance to value • Guaranteed replacement cost • Increased seismicity after a large event • Blanket coverage and coverage extensions or clauses (i.e. debris removal) • Demand surge/Post-event inflation 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part c: 0.50 point
<ul style="list-style-type: none">• Capital Market Financing:<ul style="list-style-type: none">○ Prior approval from OSFI is required before the capital market instruments can be recognized as a financial resource under the MCT Guidelines• Reinsurance Coverage:<ul style="list-style-type: none">○ When an insurer includes non-catastrophe reinsurance, it needs to be prepared to demonstrate that it has appropriately considered per event limits and other events, terms and conditions that would otherwise exhaust coverage○ In the case of whole account reinsurance insurers may need to use a full stochastic model
EXAMINER'S REPORT (BY PART, AS APPLICABLE)
<ul style="list-style-type: none">• Overall, candidates did not perform well on this question. In particular, part c
Part a
<ul style="list-style-type: none">• The most common error was for candidates to mix up the two components.
Part b
<ul style="list-style-type: none">• The most common error was that candidates provided type of risk (parameters, model, market, credit, operational...)• Some candidates described factors used in models (like construction type).
Part c
<ul style="list-style-type: none">• Common errors for the Capital Market Financing response were:<ul style="list-style-type: none">○ Pass capital adequacy test○ Reinsurers might be able to support its engagement.• Common errors for the Reinsurance coverage response were:<ul style="list-style-type: none">○ Reinsurers must be registered.○ Reinsurers might be able to support its engagement.○ May have dispute in coverage.○ Insurers should have more than one reinsurer on its treaties.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 19	
TOTAL POINT VALUE: 3.0	LEARNING OBJECTIVE: C1b
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 2.0 points	
<p>Undiscounted gross reserves = ultimate – paid = 28M Undiscounted ceded reserves = ultimate – paid = 14M Discounted gross reserves + Pfads (given) = 28,374,091 Discounted ceded reserves + Pfads (given) = 12,377,727 So, 28,374,091 = discounted gross reserves + Pfad interest + Pfad claims = discounted gross reserves @ 4% + Mfad claims * 26,804,722 Discounted gross reserves @ 4% = $0.6 \times 28\text{M} / 1.04^{0.5} + 0.4 \times 28\text{M} / 1.04^{1.5}$ = 27,033,855 Hence, Mfad claims = 5%</p> <p>Discounted ceded reserves + Pfads = discounted ceded reserve @ 4% + Mfad claims * 13,402,361 Discounted net reserves + Pfads = gross – ceded = 15,996,364 = discounted net reserves @ 4% + Mfad claims * discounted net reserves @ 5% + Mfad reinsurance * discounted ceded @ 5% = $0.6 \times 14\text{M} / 1.04^{0.5} + 0.4 \times 14\text{M} / 1.04^{1.5} + 0.05 \times (26,804,722 - 13,402,361) + \text{Mfad reinsurance} \times (13,402,361)$ Hence, 15,996,364 = 14,187,046 + Mfad reinsurance * 13,402,361 Mfad reinsurance = 13.5%</p>	
Part b: 0.5 point	
<p>Sample answers:</p> <ul style="list-style-type: none"> It is the high end of the acceptable range (0 to 15%), but should be higher since all reinsurance is with one company, and that company is poorly rated Range for reinsurance MfAD is 0 to 15%. The financial rating of AM best is low and thus expect the MfAD to be at a higher range. Thus, 13.5% is acceptable. If there is calculation error in part a and the rationale stated in part b is reasonable, credit is given 	
Part c: 0.5 point	
<ul style="list-style-type: none"> Risk free rate The rate selected by the reinsurer to discount the same liabilities 	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Part a	
Candidates generally did well on this part. The most common errors were calculation errors.	
Part b	
Candidates generally did well on this part and would earn full marks as long as they showed that they understood the range and were able to provide a rationale to back up the calculated Mfad	
Common errors included:	
<ul style="list-style-type: none"> not mentioning that Mfad is a range not providing an appropriate rationale 	
Part c	
Candidates generally did well on this question	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 20	
TOTAL POINT VALUE: 2.50	LEARNING OBJECTIVE: C1
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.50 point	
$\frac{MV_1 \times YTM_1 \times Duration_1 + MV_2 \times YTM_2 \times Duration_2 + MV_3 \times YTM_3 \times Duration_3}{MV_1 \times Duration_1 + MV_2 \times Duration_2 + MV_3 \times Duration_3} = 2.40\%$ $\frac{1,014,000 \times 2.25\% \times 0.50 + 1,006,000 \times 2.40\% \times 0.993 + 986,000 \times 2.45\% \times 1.489}{1,014,000 \times 0.50 + 1,006,000 \times 0.993 + 986,000 \times 1.489} = 2.40\%$	
Part b: 0.75 point	
<p>It is not appropriate (because the assets would not support liabilities)</p> <p>Need to consider other assets or sources of revenue to back up the liabilities</p> <p>A new discount rate would be calculated considering the different yield of those other assets / sources of revenue</p>	
Part c: 1.25 point	
<p>Any five of the following earned full credit:</p> <ol style="list-style-type: none"> 1. The method of valuing assets and reporting investment income / method of valuation 2. The allocation of those assets and that income among lines of business 3. The return (rate of return) on the assets at the balance sheet date 4. The yield on assets acquired after the balance sheet date 5. Reinvestment rates / reinvestment risk / new money rate 6. The capital gains and losses on assets sold after the balance sheet date / capital gains and losses after the calculation date 7. Capital gain and loss arising from premature liquidation 8. Investment expenses / transaction costs 9. Losses from default / quality of investments (assets) / credit risk of investment / volatility of the investments 10. Liquidity risk (of assets) 11. Market risk / changes in the yield curve / foreign exchange rate 12. Company investment strategy / philosophy / mix of investment types 13. Duration or maturity of assets / Cashflow mismatch / Timing risk 14. Reinvestment rates / reinvestment risk / new money rate 	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Part a	
<p>Most candidates were able to compute the discount rate from the information provided. Common errors included</p> <ul style="list-style-type: none"> • not using the weighting with the duration • using the coupon rate instead of the yield to maturity. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b
Most candidates recognized that the discount rate in part a would be inadequate and mentioned the need to consider other assets or sources of revenues. A common error was to neglect to mention the effect on a new discount rate.
Part c
A list from the SOP was present in three of the reference texts but candidates were not limited to that list as long as they provided reasonable considerations.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 21	
TOTAL POINT VALUE: 1.25	LEARNING OBJECTIVE: C1
SAMPLE ANSWERS	
Part a: 1.25 point	
<p>For a specific accident year :</p> <p>Investment Income from UCAE & IBNR for CY X =</p> $= \frac{(\text{Discounted Claim Liabilities CY X} + \text{Discounted Claim Liabilities CY X+1})}{2} \times \text{Annual investment yield for CY X}$ <p>For Accident Year 2012 :</p> <p>II for CY 2013 = $(103,100 + 66,625)/2 \times 3\% = 2,546$</p> <p>II for CY 2014 = $(66,625 + 56,750)/2 \times 2.8\% = 1,727$</p> <p>Amount: excess (deficiency) AY 2012 =</p> <p>UCAE CY 2012 – Paid CY 2013 – Paid CY 2014 + II CY 2013 + II CY 2014 – UCAE CY 2014 (numbers from accident year 2012)</p> $= 103,100 - 25,000 - 8,500 + 2,546 + 1,727 - 56,750 = 17,123$ <p>Ratio: excess (deficiency) = Amount excess (deficiency) / UCAE CY 2012 (numbers from accident year 2012)</p> $= 17,123 / 103,100 = 16.61\%$	
EXAMINER'S REPORT	
<p>The vast majority of candidates got full marks.</p> <p>Most candidates that didn't get full credit either didn't know how to compute the excess ratio or made some computation errors.</p>	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 22	
TOTAL POINT VALUE: 1.0 point	LEARNING OBJECTIVE: C1 – a)
SAMPLE ANSWERS	
<ul style="list-style-type: none"> • Average Net Unpaid Claims = $(181,000 + 183,000) / 2 = 182,000$ • Average Net Unearned Premiums = $(61,500 + 55,500) / 2 = 58,500$ • Average Unearned Commissions = 0 • Average Premium Deficiency = 0 • Average DPAE = $(7,500 + 6,750) / 2 = 7,125$ • Average Instalment Premium = $(54,000 + 48,000) / 2 = 51,000$ • Average Receivables from policyholders = $(8,000 + 7,500) / 2 = 7,750$ <p> NII from Ins Ops = $\text{Min}((\text{Avg Net Unpaid Claims} + \text{Avg Net UEP} + \text{Avg Unearned commissions} + \text{Avg Premium deficiency} - \text{Avg DPAE} - \text{Avg Instalment Premium} - \text{Avg receivables from policyholders}) * \text{yield}; \text{net investment income}) = \text{Min}(10,000; 6,112) = 6,112$ </p>	
EXAMINER'S REPORT	
<ul style="list-style-type: none"> • We expected the candidate to know which elements of the P&C-1 are used in the formula. We also expected the candidate to know that an average should be used and that a maximum cap should be considered. • Common errors observed include the following: <ul style="list-style-type: none"> ○ Considered the payables in the formula. ○ Added or subtracted the wrong elements. ○ Did not consider capping. ○ Did not use an average. ○ Did not consider all the elements of the formula. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 23	
TOTAL POINT VALUE: 5.75 points	LEARNING OBJECTIVE: C2 – a)
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 1.25 points	
<ul style="list-style-type: none"> • Deduction for unregistered reinsurance receivables in excess of acceptable collateral $= \text{Max}(0; (\text{Unearned premium} + \text{Outstanding Losses} + \text{Receivables}) - (\text{Non-owned deposits} + \text{Letters of credit} + \text{Payables}))$ $= \text{Max}(0 ; (7,000 + 5,000 + 2,000) - (9,000 + 3,000 + 4,000)) = \text{Max}(0 ; -2,000) = 0$ • Capital Available $= \text{Common Shares}$ $+ \text{Contributed Surplus}$ $+ \text{Retained Earnings}$ $- \text{Accumulated net after-tax fair value gains (losses) arising from changes in the company's own credit risk}$ $+ \text{AOCI}$ $+ \text{Earthquake reserves}$ $- \text{EPR not used as part of financial resources to cover exposure}$ $+ \text{Category B instruments}$ $+ \text{Category C instruments}$ $- \text{Interests in joint ventures with more than 10\% ownership}$ $- \text{Loans considered as capital to associates}$ $- \text{Intangible assets including computer software (net of eligible deferred tax liability)}$ $- \text{Deduction for unregistered reinsurance receivables in excess of acceptable collateral}$ $= 20,000 + 2,500 + 4,500 - 3,000 + 4,000 + 2,000 - 1,000 + 12,000 + 2,000 - 2,500 - 2,000 - 500 - 0$ $= 38,000$ • Limit on category B + C capital instruments <ul style="list-style-type: none"> ○ $40\% * (\text{Capital Available} - \text{AOCI}) = 40\% * (38,000 - 4,000) = 13,600$ ○ This is less than $12,000 + 2,000$, so an adjustment is required. • Limit on category C capital instruments <ul style="list-style-type: none"> ○ $7\% * (\text{Capital Available} - \text{AOCI}) = 7\% * (38,000 - 4,000) = 2,380$ ○ This is more than 2,000, so an adjustment is required. • The adjustment required is 400 for B + C and 380 for C. Since we must take the maximum, we adjust the capital available by 400. • Capital available after adjustment $= 38,000 - 400 = 37,600$ 	
Alternate solution:	
<ul style="list-style-type: none"> • The adjustment required for category B + C limits can be determined as follows: <ul style="list-style-type: none"> ○ $(\text{B Capital} + \text{C Capital} - x) / (\text{Capital Available} - \text{AOCI} - x) = 40\%$ ○ $(14,000 - x) / (38,000 - 4,000 - x) = 40\% \rightarrow x = 667$ ○ Capital available after adjustment $= 38,000 - 667 = 37,333$ 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b: 1.5 points

Capital required for premium liabilities

Sum over all LOB($\text{Max}(\text{Net Written Premium} * 30\% ; \text{Net Premium Liabilities excl. PfAD}) * \text{Margin}$)
 $= \text{Max}((80,000 + 18,000 - 8,000) * 30\% ; 20,000) * 20\% + \text{Max}((100,000 + 21,000 - 30,000) * 30\% ; 55,000) * 15\%$
 $= 13,650$

Capital required for unpaid claims

Sum over all LOBs($\text{Net Unpaid Claims Excl. PfAD} * \text{Margin}$)
 $= 50,000 * 15\% + 70,000 * 10\%$
 $= 14,500$

Capital required for reinsurance ceded to unregistered reinsurer

$\text{Max}(0 ; 15\% * (\text{Unearned premium} + \text{Outstanding Losses}) - \text{Max}(0 ; \text{Non-owned deposits} + \text{Letters of credit} + \text{Payables} - (\text{Receivables} + \text{Unearned premium} + \text{Outstanding Losses})))$
 $= \text{Max}(0 ; 15\% * (7,000 + 5,000) - \text{Max}(0 ; 9,000 + 3,000 + 4,000 - (2,000 + 7,000 + 5,000)))$
 $= \text{Max}(0 ; 1,800 - 2,000)$
 $= 0$

Total capital required for insurance risk

Capital required for premium liabilities + Capital required for unpaid claims + Capital Required for catastrophes + Capital required for reinsurance ceded to unregistered reinsurer
 $= 13,650 + 14,500 + 5,000 + 0 = 33,150$

Alternate solution

For the capital required for unregistered reinsurance, the following answer was also accepted based on the formula applicable for the MCT as at December 31st, 2014:

$\text{Max}(0 ; 10\% * (\text{Unearned premium} + \text{Outstanding Losses}) - \text{Max}(0 ; \text{Non-owned deposits} + \text{Letters of credit} + \text{Payables} - (\text{Receivables} + \text{Unearned premium} + \text{Outstanding Losses}))/1.5)$
 $= \text{Max}(0 ; 10\% * (7,000 + 5,000) - \text{Max}(0 ; 9,000 + 3,000 + 4,000 - (2,000 + 7,000 + 5,000))/1.5)$
 $= \text{Max}(0 ; 1200 - 2000 / 1.5)$
 $= 0$

Part c: 1.0 point

Base capital required $= 8.5\% * (\text{Capital required for insurance risk} + \text{capital required for market risk} + \text{capital required for credit risk}) = 8.5\% * (33,150 + 8,000 + 6,000) = 4,008$

Operational risk capital required for direct premiums

$2.5\% * (\text{Direct written premiums}) = 2.5\% * (100,000 + 80,000) = 4,500$

Operational risk capital required for assumed premiums

$\text{Assumed premiums} = 1.75\% * (\text{Assumed written premiums}) = 1.75\% * (18,000 + 21,000) = 683$

Operational risk capital required for ceded premiums

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Ceded premiums = $2.5\% * (\text{Ceded written premiums}) = 2.5\% * (8,000 + 30,000) = 950$

Operational risk capital required for premium growth

0 because there is no growth in excess of 20%

Subtotal = $4,008 + 4,500 + 683 + 950 = 10,141$

Capital Required for operational risk

$\text{Min}(30\% * (33,150 + 8,000 + 6,000); 10,141) = \text{Min}(14,145 ; 10,141) = 10,141$

Part d: 1.0 point

Excess collateral

= $\text{Max}(0; \text{Non-owned deposits} + \text{Letters of credit} - \text{Unearned premium} - \text{Outstanding Losses} - 15\% * (\text{Unearned premium} + \text{Outstanding Losses}) - \text{Receivables} + \text{Payables})$

= $\text{Max}(0 ; 9,000 + 3,000 - 7,000 - 5,000 - 15\% * (7,000 + 5,000) - 2,000 + 4,000)$
= 200

Proportional allocation of excess collateral

= $\text{Excess collateral} / \text{Total collateral}$

= $200 / (9,000 + 3,000)$

= 1.666666%

Total capital required for collateral

= $\text{sum over collateral components} (\text{Capital Factor} * \text{Collateral})$

= $0.25\% * 9,000 + 0.5\% * 3,000$

= 37.50

Reduction in capital required for excess collateral

= $\text{Total capital required for collateral} * \text{Proportional allocation of excess collateral}$

= $37.50 * 1.66666\%$

= 0.625

Part e: 1.0 point

Diversification credit

$(A + I) - (A^2 + I^2 + 2*0.5*A*I)^{0.5}$

= $(14,000 + 33,150) - (14,000^2 + 33,150^2 + 2*0.50*14,000*33,150)^{0.5}$

= 5,209

, where A = Asset risk margin = $8,000 + 6,000 = 14,000$ and I = Insurance risk margin = 33,150

MCT Ratio

= $\text{Capital Available} / ((\text{Insurance risk margin} + \text{Asset risk margin} + \text{operational risk margin} - \text{diversification credit})/1.5)$

= $37,600 / ((33,150 + 8,000 + 6,000 + 10,141 - 5,209) / 1.5) = 108.3\%$

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Part a	
	<ul style="list-style-type: none">• For this question, candidates were expected to know that unregistered reinsurance may imply a deduction from capital available. In addition, candidates were expected to calculate the capital available, including deductions for category B and C capital instruments in excess of regulatory limits.• Common errors observed include the following:<ul style="list-style-type: none">○ Incorrect application of the capital available formula.○ Did not compute category B and C limits.○ Did not deduct AOCI in calculation of category B and C limits.○ Did not calculate deduction for unregistered reinsurance.
Part b	
	<ul style="list-style-type: none">• For this question, candidates were expected to calculate the following four elements:<ul style="list-style-type: none">○ Capital required for net unpaid claims○ Capital required for net premium liabilities○ Capital required for reinsurance ceded to unregistered reinsurers○ Total capital required for insurance risk (including catastrophe risk)• Common errors observed include the following:<ul style="list-style-type: none">○ In the calculation of net premium liabilities:<ul style="list-style-type: none">▪ Not using net written premium▪ Not applying the 30% factor on net written premium○ In the calculation of capital required for reinsurance ceded to unregistered reinsurers:<ul style="list-style-type: none">▪ Not calculating the components correctly.▪ Forgetting to apply the 15% margin on unpaid claims and unearned premiums.○ Not adding the capital required for catastrophes
Part c	
	<ul style="list-style-type: none">• For this question, we expected candidates to know the calculation of the capital required for operational risk.• Common errors observed include the following:<ul style="list-style-type: none">○ Not taking into account the maximum.○ Incorrectly calculating the capital required for premium growth.○ Incorrectly calculating base capital required.
Part d	
	<ul style="list-style-type: none">• For this question, candidates were expected to know how to calculate the excess collateral as well as the reduction in capital required for this excess collateral.• Common errors observed include the following:<ul style="list-style-type: none">○ Incorrectly calculating the excess collateral.○ Incorrectly calculating the proportional allocation of excess collateral.○ Incorrectly calculating the total capital required for collateral.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part e

- For this question, candidates were expected to calculate the diversification credit and the MCT ratio.
- Common errors observed include the following:
 - Not calculating the diversification credit.
 - Incorrectly applying the diversification credit formula.
 - Not dividing the MCT denominator by 1.5.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 24	
TOTAL POINT VALUE: 2.00	LEARNING OBJECTIVE: C2
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.75 point	
<p>Net Premium Earned = Premiums written less return premiums - Direct</p> <ul style="list-style-type: none"> + Premiums written less return premiums - Assumed - Premiums written less return premiums - Ceded + Net unearned premiums at beginning of year - Net unearned premiums at period end <p>= 220,000</p> <p>Net Claims and Adjustment Expenses = Claims incurred including adjustment expenses – Direct</p> <ul style="list-style-type: none"> + Claims incurred including adjustment expenses – Assumed - Claims incurred including adjustment expenses – Ceded <p>= 145,000</p> <p>Loss Ratio = Net Claims and Adjustment Expenses / Net Premiums Earned = 65.9%.</p>	
Part b: 0.50 point	
<p>1) Expenses = Total Gross Commissions</p> <ul style="list-style-type: none"> - Total Ceded Commissions + Acquisition Expenses – Taxes + Acquisition Expenses - Other + General Expenses <p>= 58,000</p> <p>Combined Ratio = Total Claims and Expenses / Net Premiums Earned = 92.3%</p> <p>2) If Candidate allocated Underwriting expenses to Net Written Premiums :</p> <p>Underwriting/Acquisition Expenses = Total Gross Commissions</p> <ul style="list-style-type: none"> - Total Ceded Commissions + Acquisition Expenses – Taxes + Acquisition Expenses – Other <p>= 45,500</p> <p>Net Written Premiums = Premiums written less return premiums - Direct</p> <ul style="list-style-type: none"> + Premiums written less return premiums - Assumed - Premiums written less return premiums - Ceded <p>= 230,000</p> <p>Underwriting/Acquisition Expenses ratio = 45,500 / 230,000 = 19.8%</p>	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

General Expenses ratio = $12,500 / 220,000 = 5.7\%$

Expenses ratio = $19.8\% + 5.7\% = 25.5\%$

Combined ratio = $65.9\% + 25.5\% = 91.4\%$

Part c: 0.75 point

Investment Income = Investment Operations – Income
+ Investment Operations - Realized Gains (Losses)
+ Investment Operations – Expenses
= 18,000

Pre-tax income = Net Premium Earned - Total Claims and Expenses + Investment Income + Other Revenues
= 35,800

Net Income = Pre-tax income * (1 – tax rate) = 27,924

EXAMINER'S REPORT (BY PART, AS APPLICABLE)

When calculations underlying the response from an early part of the question are used in the response to a later part, candidates would not lose credit more than once for a calculation error that affect both parts. For example, if the candidate used net written premiums instead of net earned premiums in part a, but other inputs and calculations were appropriate, the candidate would lose credit only once.

Part a

Most candidates that didn't get full marks weren't able to compute the net earned premiums. They either didn't consider the assumed or ceded premiums or didn't take into account the change in unearned premiums for the calendar year.

Part b

Candidates needed to compute the expense ratio and add it to the net loss ratio to get the combined loss ratio. Common errors were:

- not including net commissions in the expense ratio
- including investment operations expenses or other revenues in the expense ratio.

Part c

Most candidates answered this question well. The most common errors were not applying the tax rate, forgetting to include an element in the expenses or investment income calculation and having the right formula without using the right number from what was given in the question.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 25	
TOTAL POINT VALUE: 2.0 points	LEARNING OBJECTIVE: C1 – b)
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
<p>A = Average(Discounted Reserves Incl. PfAD AY2013 @ Dec. 31st 2012; Discounted Reserves Incl. PfAD AY2013 @ Dec. 31st 2013) * 3% + Average(Discounted Reserves Incl. PfAD AY2013 @ Dec. 31st 2013; Discounted Reserves Incl. PfAD AY2013 @ Dec. 31st 2014) * 3%</p> <p>= Average(0 ; 371,896) * 3% + Average(371,896 ; 165,290) * 3%</p> <p>= 13,636</p>	
<p>B = Average(Discounted Reserves Incl. PfAD AY2014 @ Dec. 31st 2013; Discounted Reserves Incl. PfAD AY2014 @ Dec. 31st 2014) * 3%</p> <p>= Average(0 ; 430,337) * 3%</p> <p>= 6,455</p>	
<p>C = (Paid Loss Cumulative AY2013 + Total Undiscounted UCAE AY2013) / (Earned Premiums AY2013)</p> <p>= (155,000 + 345,000) / 760,000</p> <p>= 65.8%</p>	
<p>D = (Paid Loss Cumulative AY2014 + Total Undiscounted UCAE AY2014) / (Earned Premiums AY2014)</p> <p>= (405,000 + 170,000) / 850,000</p> <p>= 67.6%</p>	
<p>E = (Paid Loss Cumulative AY2013 + Discounted Reserves Incl. PfAD AY2013 – Cum. Investment Income from Unpaid Claims AY2013) / (Earned Premiums AY2013 + Investment Income from UPR AY2013)</p> <p>= (165,290 + 345,000 – 13,636) / (760,000 + 11,400)</p> <p>= 64.4%</p>	
<p>F = (Paid Loss Cumulative AY2014 + Discounted Reserves Incl. PfAD AY2014 – Cum. Investment Income from Unpaid Claims AY2014) / (Earned Premiums AY2014 + Investment Income from UPR AY2014)</p> <p>= (430,337 + 170,000 – 6,455) / (850,000 + 12,750)</p> <p>= 68.8%</p>	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<ul style="list-style-type: none"> • Common errors observed include the following: <ul style="list-style-type: none"> ○ Not calculating the CY2013 investment income for AY2013. ○ Not taking an average while calculating investment income. ○ Incorrectly adding or subtracting the investment income from unpaid claims and UPR in the discounted loss ratio formula. ○ Not using discounted reserves incl. PfAD for the calculation of the investment income. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

- Candidates lost credit only once for errors made in calculating the same component for AY 2013 and AY 2014.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 26	
TOTAL POINT VALUE: 2.5	LEARNING OBJECTIVE: C1 knowledge statement a and i
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 1 point	
<p>Since we have liquid assets, we need total assets to calculate non-liquid assets. Can get this from Equity and Liability totals. Because there is no capital required for catastrophes and reinsurance ceded to unregistered reinsurers then Adjusted Equity = Equity.</p> <p>Return on Equity = Net income / Equity $11.6\% = 19,970 / \text{Equity}$ Equity = 172,155</p> <p>Liabilities as a % of Liquid Assets = Liabilities / Liquid Assets $142\% = \text{Liabilities} / 128,000$ Liabilities = 181,760</p> <p>Assets = Liabilities + Equity = 181,760 + 172,155 = 353,915 Non-Liquid Assets = Assets – Liquid Assets = 353,915 – 128,000 = 225,915</p>	
Part b: 1 point	
<p>Liabilities / Liquid assets has a maximum of 105% for the ratio. The company has more at 142%, meaning that it runs the risk of not having enough assets that can be easily sold to cover short term obligations in the near future.</p> <p>Net Risk Ratios over 300% indicate capital strain and vulnerability. The company is well within this limit at 60%, meaning that it is likely not overextending its underwriting exposure relative to its capital base.</p>	
Part c: 0.5 point	
<p>Return on Equity attempts to measure return to shareholders per unit of capital, while Return on Revenue measures the income generated relative to its revenue generating capacity.</p>	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<ul style="list-style-type: none"> Candidates were expected to know and interpret MSA ratios and page 10.60 of OSFI annual return. 	
Part a	
<ul style="list-style-type: none"> Candidates generally performed well on this part. Common errors include: <ul style="list-style-type: none"> Using average assets as the assets at 2014 year-end, derived from the Return on Assets ratio. Assuming net loss reserve equals total liabilities Calculating total assets = total liabilities + net income. 	
Part b	
<ul style="list-style-type: none"> Candidates generally performed well on this part. Common errors include: <ul style="list-style-type: none"> not identifying the threshold ratios misinterpret/not provide the definition of the ratios. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part c
Candidates generally performed well on this part. Candidates got partial credit as they were only able to provide one definition.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 27	
TOTAL POINT VALUE: 1.5	LEARNING OBJECTIVE: C1, knowledge statement c
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.5 point	
<p>Risk transfer requires that:</p> <ol style="list-style-type: none"> The reinsurer assumes <u>significant insurance risk</u> under the reinsured portion of the underlying insurance agreement; and It is <u>reasonably possible</u> that the reinsurer may realize a <u>significant loss</u> from the transaction. 	
Part b: 0.5 point	
<p>(Full credit is given if the candidate stated that the profit commission should not be included and state a reason)</p> <p>Profit commissions generally should not be considered in risk transfer analysis (either one of the following reason will receive the credit)</p> <ul style="list-style-type: none"> The results of the ceding company should not be considered in a risk transfer analysis Premium impacted by profit commission since reinsurance contracts are priced while considering any and all expected payments paid and received by the reinsurer. Profit commissions increase the amount of future expected payments by the reinsurer to the ceding company and may result in a higher premium for the contract Profit commission would increase the premium 	
Part c: 0.25 point	
<p>Sample 1: Only cash flows between the ceding company and the reinsurer should be considered in a risk transfer analysis. This means that broker expenses, operating expenses, fees related to letters of credit, and taxes should bear no impact on the analysis</p> <p>Sample 2: Reinsurer's expenses should have no impact on the ERD calculation.</p>	
Part d: 0.25 point	
Exhibits risk transfer since ERD is greater than 1%.	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Part a	
<ul style="list-style-type: none"> Candidates generally performed well on this part. Common errors include: <ul style="list-style-type: none"> missing key words from the response (e.g., <u>significant</u> insurance risk, <u>reasonably possible</u>). failing to identify it is related to insurance risk. 	
Part b	
<ul style="list-style-type: none"> Candidates, in general, understood that profit commissions should not be considered in risk transfer analysis, but some candidates failed to describe reasons behind it. 	
Part c	
<ul style="list-style-type: none"> Most candidates understood that reinsurer's expenses should not be considered in the ERD calculation. 	
Part d	
<ul style="list-style-type: none"> Candidates performed well on this part. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 28	
TOTAL POINT VALUE: 2.25	LEARNING OBJECTIVE: C1, knowledge statement b
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 2.25 point	
<ol style="list-style-type: none"> 1. Expected claims and ALAE for voluntary business = $5000 * 0.7 + 1000 * 0.8 = 4,300$. 2. Expected claims and ALAE for Facility = $500 * 0.95 = 475$ 3. Maintenance expense for voluntary business only = $(5000+1000) * 2.5\% = 150$ (no maintenance expense for Facility business) 4. Internal Adjustment Expense = $4300 * 5\% = 215$ (no IAE for Facility business) 5. Commission = $(5000+1000) * 6\% = 360$ (no commission for Facility business). 6. $EQUUP = UEP - \text{expected claims and ALAE for voluntary business and Facility} - ME - IAE - \text{Commission} = (5000+1000+500) - 4300 - 475 - 150 - 215 - 360 = 1000$ <p>Maximum allowable DPAE = $EQUUP + \text{Unearned commissions} = 1000 + 200 = 1,200$ Since DPAE is 1100 < allowable Maximum DPAE, the company can book DPAE of 1100 on its financial statements.</p>	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Candidates general performed very well on this question.	
Part a	
<ul style="list-style-type: none"> • Most candidates received full marks. • Some candidates performed the calculation correctly, but failed to draw a conclusion as to determining the DPAE to be booked on the financial statements. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 29	
TOTAL POINT VALUE: 3	LEARNING OBJECTIVE: C2
SAMPLE ANSWERS	
Part a: 1 point	
<p>The insurer's financial condition would be satisfactory if throughout the forecast period, under the base scenario and all plausible scenarios, the statement value of the insurer's assets is greater than the statement value of its liabilities, and under the base scenario, the insurer meets the supervisory target capital requirement. The supervisory target capital requirement for federally-regulated insurer is set at 150%.</p> <p>Therefore, Company A is not in satisfactory financial condition since the MCT under the base scenario is less than 150%. Company B is in satisfactory financial condition as the MCT is greater than 150% under the base scenario and equity is positive under all scenarios.</p>	
Part b: 0.5 point	
<p>The following were accepted as an adverse scenario affecting both companies:</p> <ul style="list-style-type: none"> • A change to legislation that prescribes levels of insurance coverage. • An increase in taxation rates or rules for corporations, such as income tax, capital gains tax deductions, or offshore income. • Nationalization or privatization of a line of business in a jurisdiction. • A change to legislation that creates or restricts distribution channels. • A change in regulatory solvency standards that could increase the capital requirements for property and casualty insurers. • Political instability that leads to confiscation of assets, closure for new business, exchange controls. <p>The following were accepted as an adverse scenario affecting Company B only:</p> <ul style="list-style-type: none"> • A rate freeze or rollback of rates by a government body or regulator on lines of business and jurisdictions in which rates are subject to regulatory approval. • A change to regulations regarding use of rating variables that may impact the adequacy of rates and availability of insurance on lines of business and jurisdictions in which rates are subject to regulatory approval. • An increase in caps for non-pecuniary damages • Government decides to change the threshold to allow more claims to go to liability based litigation. 	
Part c: 1 point	
<p>Social Inflation : The claims inflation resulting from changes in the likelihood of claimants bringing suits, the size of awards, the standards of liability or the attitudes of claimants towards settlement of their claims.</p> <p>Since in Quebec there is a no-fault system, the risk of social inflation is much lesser than in Ontario where a limited tort system is in place. Therefore, in Ontario there is possible change in the likelihood of claimants bringing suits as people can sue in certain cases which is not the case in Quebec.</p>	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part d: 0.5 point

Any of the following were accepted as a Ripple Effect:

- Deterioration of loss ratios
- Increased litigation costs
- Reduced availability of insurance to the public
- Increased volume of industry pools resulting in increased assessments
- Increased regulatory monitoring, of filing of rates
- Forced sale or liquidation of assets
- Problems with reinsurance coverage
- Increased policy liabilities related to current reinsurance contracts that are swing-rated, have variable commission, or require reinstatements
- Increased reinsurance rates or non-availability of reinsurance at the next renewal

Any of the following were accepted as Corrective Management Actions:

- Reducing the volume of business written by restricting sales or broker force, freezing new business
- Creating or expanding a separate company or distribution channel
- Reviewing the target mix by line of business or jurisdictions
- Reviewing reinsurance coverage, type, or contract terms at next renewal
- Withdraw for the jurisdiction or line of business

EXAMINER'S REPORT

The candidate was expected to know the requirements for being in financially satisfactory condition in DCAT analysis.

Overall, candidates did well on parts a and d. However, the candidates did not perform as well on parts b and c.

Part a

The candidate was expected to know and apply the two conditions required for an insurer to be in financial satisfactory condition. A common error was to identify the threshold as 100% as supervisory target capital instead of the 150% target.

Part b

The intent of the question was for the candidates to display an understanding of the different types of rate regulation in place in Quebec (use and file) and in Ontario (prior approval). However, many candidates focused on the differences between Ontario's threshold system and Quebec's pure no-fault auto insurance.

All reasonable answers were accepted for full credit.

Part c

Candidates were expected to know the definition of social inflation and its impact on Ontario and Quebec auto insurers. Most candidates did well on identifying how social inflation would more likely affect Ontario insurers than Quebec insurers. However, candidates did poorly in defining social inflation. Many candidates confused social inflation with general inflation.

Part d

There are many correct solutions, so candidates did well on this question .

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 30

TOTAL POINT VALUE: 2.25

LEARNING OBJECTIVE: C3

SAMPLE ANSWERS

Part a: 1.25 point

	<u>Option A</u>	<u>Option B</u>
Asset duration	4 years	3 years
Liability duration	2 years	2 years
Coverage Ratio	60%	60%
Interest rate movement in runoff period	100 basis points	100 basis points
Margin for asset/liab mismatch	$=(4-2)/2 * 60\% \times 100 \text{ bp}$	$=(3-2)/2 * 60\% \times 100 \text{ bp} = 30\text{bp}$
Timing risk margin	$10\% \times 4\% = 40 \text{ bp}$	$10\% \times 3\% = 30 \text{ bp}$
Credit Risk Margin	100 basis points	50 basis points
Total Margin	200 basis points	110 basis points

Another option to calculate timing risk margin

$$\text{Margin} = 4\% - [(1 + 4\%)^{0.9} - 1] = 41 \text{ bp}$$

Total margin 201 bp

Discount rate for liabilities Option A $4\% - 2\% = 2\%$ or $4\% - 2.01\% = 1.99\%$

Part b: 0.5 point

Any two of the following received full credit:

- Lower liabilities, due to higher yield
- Higher investment returns
- Less reinvestment risk

Part c: 0.5 point

Any two of the following received full credit:

- Less volatility in assets
- Less duration mismatch
- Less volatility in liabilities
- Less credit risk
- Lower credit risk and timing risk margin, which results smaller investment MfAD

EXAMINER'S REPORT

The candidate was expected to know and apply the explicit quantification method for calculating the discount rate. The candidate was also expected to provide two reasons for preferring to invest in high yield bonds versus low yield bonds.

Overall, candidates did reasonably well on this question.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part a
Common errors included: <ul style="list-style-type: none">• Not knowing the formula for Asset-Liability Mismatch.• Calculating the margin but not the discount rate.
Part b
Most candidates were able to only provide one reason for preferring strategy A. Some candidates stated the two reasons as higher yield and higher investment returns. These two reasons were identical and thus only receive partial credit. To receive full credit, candidates are expected to state that due to the higher yield, it lowers the policy liabilities.
Part c
Most candidates did very well on this question and scored full marks. Common errors was that candidates stated the same reason, but in different wordings.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 31	
TOTAL POINT VALUE: 1.5	LEARNING OBJECTIVE: C3 for all parts
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.5 point	
Candidate need one element from each concept to receive full credit.	
<ul style="list-style-type: none"> • Liquidation: <ul style="list-style-type: none"> ○ Liquidation sees assets and liabilities as a run-off. ○ Values of assets and liabilities if the company is forced to liquidate (shut down) today. ○ Liquidation is important for the regulator. • Going concern : <ul style="list-style-type: none"> ○ Going concern sees assets and liabilities as an ongoing business. ○ Evaluation as if company will still operate in the future. ○ Going concern is more important to investors or shareholders. 	
Part b: 0.50 point	
Candidate need one element from each concept to receive full credit.	
<ul style="list-style-type: none"> • Fair value: <ul style="list-style-type: none"> ○ Fair value is a value that it would be bought or sold for in the open market. ○ Fair value is the current market value. ○ It is more accurate than historical price. • Historical cost : <ul style="list-style-type: none"> ○ Historical cost means valuing it at the original purchase price less depreciation. ○ It is easier to obtain or calculate than fair value. 	
Part c: 0.50 point	
Candidate need one element from each concept to receive full credit.	
<ul style="list-style-type: none"> • Principle-based: <ul style="list-style-type: none"> ○ A principle describes a general accounting approach that must be interprets and applied. ○ More adaptable to changes vs. rule-based. • Rule-based: <ul style="list-style-type: none"> ○ A rule provides specific accounting guidance on how something should be done. ○ Easier to understand and audit than principle-based. 	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
<ul style="list-style-type: none"> • Most candidates performed well on this question. 	
Part a	
<ul style="list-style-type: none"> • The candidates should use the definitions of each concept to contrast or give some differences on one aspect between the two concepts. 	
Part b	
<ul style="list-style-type: none"> • The most common error was not specifying that the historical cost needs to consider depreciation. 	
Part c	
<ul style="list-style-type: none"> • The most common error was to mix up the two concepts. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 32	
TOTAL POINT VALUE: 3.25	LEARNING OBJECTIVE: D for all parts
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 1 point	
<p>Any four of the following received full credit:</p> <ul style="list-style-type: none"> • CFO : Before taking the role of AA, the CFO should of requested and received from the previous company actuary a written statement that includes the circumstances and reasons for the resignation. • Outgoing AA : must file reasons for resigning • Board : The audit committee of the company must provide the Superintendent with statement indicating that it is satisfied that the duties of both positions in the company will be adequately performed and that the actuarial duties will be performed in an independent manner. • Regulator : The company must get authorization by the Superintendent for the appointment or holding of the position of AA. • CFO must be an FCIA in good standing. • He needs to have 3 out of 6 yr of Canadian experience and at least 1 yr experience for valuation Canadian policy liability • He should be familiar with the SOP and legislation • He meets the CIA's continuing professional development requirement • Have not been the subject of an adverse finding by CIA Disciplinary Tribunal 	
Part b: 0.50 point	
<p>Any one of the following received full credit :</p> <ul style="list-style-type: none"> • Requires special approval by OSFI • Given that this was a sudden and unexpected event, the company can either expect that OSFI will accept the CFO taking on the role of the AA or will give the company additional time to submit their AA report so that they can find an acceptable replacement AA. • May approve because it is an extraordinary event. • May reject for various reasons e.g., conflict of interest • If reject, company may be late in filing its AAR and Annual return, • Yes, if the CFO meets the requirement to be an AA • No, if the CFO doesn't have all the requirement to be an AA like that he needs to have 3 out of 6 yr of Canadian experience and at least 1 yr experience for valuation Canadian policy liability or other requirements. • Yes, if the audit committee is satisfied that he can do both job independently. • No, since the CFO started immediately its functions without receiving the statement from the previous actuary (assuming) and did not complete its other duties before accepting the appointment. • Yes, since he is a FCIA and have all requirements. • No, because he began work before the audit committee send the letter to OSFI for approval. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part c: 1 point
Any four of the following received full credit <ul style="list-style-type: none">• Date of appointment• Date of resignation of the previous actuary• Date on which OSFI was notified of the appointment• Confirmation and communication with the previous Actuary, as required by legislation• List of the Actuary's qualifications, keeping in mind, but not limited to, the CIA's Rules of professional conduct.
Part d: 0.75 point
<ul style="list-style-type: none">• The person ceases to be an actuary<ul style="list-style-type: none">○ No longer a FCIA○ Subject to disciplinary actions by CIA and lose his title• The person dies• The appointment of the person as actuary of the company is revoked by the directors of the company
EXAMINER'S REPORT (BY PART, AS APPLICABLE)
<ul style="list-style-type: none">• Candidates generally performed well on this question. Part c was the most challenging
Part a
Common errors included: <ul style="list-style-type: none">• Not mentioning the duties regarding the previous actuary.• Not providing enough details of the requirements.
Part b
<ul style="list-style-type: none">• Most candidates received full credit on this part.
Part c
<ul style="list-style-type: none">• A common error was not being precise enough regarding the disclosures• Another common error was that candidates stated the requirements that should be included in the AA report, instead of stating the requirements regarding the appointment of the actuary.
Part d
<ul style="list-style-type: none">• Most candidates received full credit for this part.• The most common error was to use "retired" as one of the 3 reasons – retirement implies resignation.

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 33	
TOTAL POINT VALUE: 1.0	LEARNING OBJECTIVE: D1d
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.5 point	
An omission, understatement or overestimate is material if it will affect the user's decision making or reasonable expectation	
Part b: 0.5 point	
Candidates would receive credits if they mentioned anything related to the characteristics of the entity and anything related to users' intent/situation/purpose. Sample answers include:	
<ul style="list-style-type: none"> - Size of the company - User of the work 	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Part a	
Candidates generally performed well on this question	
Part b	
<ul style="list-style-type: none"> • Candidates were typically able to provide one consideration • Common error is that candidates typically omit one of the two considerations or providing the same considerations in different wordings. 	

EXAM 6C SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 34	
TOTAL POINT VALUE: 1.75	LEARNING OBJECTIVE: D1
SAMPLE ANSWERS (BY PART, AS APPLICABLE)	
Part a: 0.75 point	
<ol style="list-style-type: none"> 1. Assisting in OSFI about the quality of AA's work 2. Be benefit of the actuaries <ul style="list-style-type: none"> - Continuing professional education - Independent consulting view 3. Establish the confidence from public/broad/senior management about AA's work 	
Part b: 1.0 point(s)	
<p>Candidates would receive full credits if they were able to give an example related to each broad category: valuation assumptions, methodology, valuation method, company operation, and material external event. Sample responses include:</p> <ol style="list-style-type: none"> 1. Methodology changed 2. Valuation software changed 3. Significant change for assumptions/selections 4. Valuation Line of business changed (mix of business) 	
EXAMINER'S REPORT (BY PART, AS APPLICABLE)	
Part a	
<ul style="list-style-type: none"> • Generally candidates performed well on this part, and the majority received full credit. • 	
Part b	
<ul style="list-style-type: none"> • Candidates receive full credit by providing four examples related to each of the items listed on OSFI Appointed Actuary: Legal requirements, Qualifications and Peer Review (Page 8): <ol style="list-style-type: none"> 1. changes in key actuarial valuation assumptions or unusual adverse or favourable loss development 2. changes in methodology used in the valuation; 3. changes in company operations or circumstances 4. use of a revised valuation model 5. material events that would suggest that valuation assumptions or methods may need to be modified • Most candidates received partial credit on this part. Most candidates provided 4 examples, but it was common for some examples to relate to the same category(e.g., change of selected discount rate & change of selected LDFs both relate to assumption changes) 	