



CASUALTY ACTUARIAL SOCIETY  
AND THE  
CANADIAN INSTITUTE OF ACTUARIES



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May 4, 2010

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# Exam 7-Canada

Law, Regulation, Government and Industry  
Insurance Programs, and Financial Reporting

4 HOURS

## INSTRUCTIONS TO CANDIDATES

1. This 88.75 point examination consists of 36 problem and essay questions.
2. For 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. Use dark pencil or ink. Do not use multiple colors.
  - Write your Candidate ID number and the examination number, 7C, at the top of each answer sheet. Answer these questions on the lined sheets provided in your Examination Envelope. Your name, or any other identifying mark, must not appear.
  - Do not answer more than one question on a single sheet of paper. Write only on the front lined side of the paper – DO NOT WRITE ON THE BACK OF THE PAPER. Be careful to give the number of the question you are answering on each sheet. If your response cannot be confined to one page, please use additional sheets of paper as necessary. Clearly mark the question number on each page of the response in addition to using a label such as "Page 1 of 2" on the first sheet of paper and then "Page 2 of 2" on the second sheet of paper.
  - The answer should be concise and confined to the question as posed. When a specified number of items are requested, do not offer more items than requested. For example, if you are requested to provide three items, only the first three responses will be graded.
  - In order to receive full credit or to maximize partial credit on mathematical and computational questions, you must clearly outline your approach in either verbal or mathematical form, showing calculations where necessary. Also, you must clearly specify any additional assumptions you have made to answer the question.
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.  
  
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 24, 2010.

**END OF INSTRUCTIONS**

## **EXAM 7 – CANADA, SPRING 2010**

1. (1.5 points)

Describe three social functions of tort law.

**CONTINUED ON NEXT PAGE**

## EXAM 7 – CANADA, SPRING 2010

2. (2.5 points)

The standard of care in determining negligence is set by referring to the “reasonable person”.

a. (1 point)

Fully describe the “reasonable person”.

b. (0.5 point)

Describe how the standard of care for the reasonable person is determined.

c. (1 point)

Identify two standards of care other than the reasonable person that are used in negligence actions. For each standard, briefly describe a circumstance in which the standard would apply.

## EXAM 7 – CANADA, SPRING 2010

3. (2 points)

In common law, occupiers' liability distinguishes among four classes of entrants onto an occupier's premises.

a. (1 point)

Identify and briefly describe two of these classes.

b. (1 point)

For each class identified in part a. above, describe the occupier's duty to the entrant.

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## EXAM 7 – CANADA, SPRING 2010

4. (2.5 points)

a. (1 point)

When buying insurance, the insured owes certain obligations to the insurer. Contrast the obligations of the insured under “utmost good faith” with the obligations under the traditional rule of “let the buyer beware”.

b. (0.5 point)

Describe one way in which an insured’s duty of utmost good faith protects the insurer.

c. (1 point)

Describe two ways in which the insurer’s duty of utmost good faith protects the insured.

**EXAM 7 – CANADA, SPRING 2010**

5. (1 point)

a. (0.5 point)

Define the term “moral hazard”.

b. (0.5 point)

Describe how the principle of indemnity works to avoid moral hazard.

## EXAM 7 – CANADA, SPRING 2010

6. (1.5 points)

a. (0.75 point)

Identify and describe the test used by the courts to determine whether a person who purchased indemnity insurance had an insurable interest in the subject matter.

b. (0.75 point)

Briefly describe the three conditions that must be satisfied in order for one to be allowed to insure the interest of another.

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## EXAM 7 – CANADA, SPRING 2010

7. (3.25 points)

a. (1.5 points)

Identify and describe the two types of compensatory damages.

b. (1 point)

Describe the following types of damages:

- i. Punitive damages
- ii. Aggravated damages

c. (0.75 point)

Assume a court case in which a plaintiff is totally disabled as a result of negligence by the defendant. In determining the award for loss of income, briefly describe how the court would consider the following factors:

- i. Income tax
- ii. Post-injury life span
- iii. Collateral benefits

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**EXAM 7 – CANADA, SPRING 2010**

8. (1.5 points)

a. (1 point)

Discuss two arguments that support reform of the British Columbia Ultimate Limitation Period (ULP).

b. (0.5 point)

Briefly describe the two changes to the ULP recommended by the B.C. Law Institute.

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## EXAM 7 – CANADA, SPRING 2010

9. (1.75 points)

In the recent past, various solutions to the asbestos litigation crisis in the United States have been proposed. At the federal level, the Fairness in Asbestos Injury Resolution Act (FAIR Act) proposed a “trust fund approach” as a solution to the problem.

a. (1 point)

Fully describe the trust fund approach.

b. (0.75 point)

According to the American Academy of Actuaries Mass Torts Subcommittee, “Current Issues in Asbestos Litigation”, there are several questions that this approach has raised which have been subject to considerable debate. State three of these questions.

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## EXAM 7 – CANADA, SPRING 2010

10. (2.5 points)

The Autorité des marchés financiers (AMF) published a study titled “Commercial Practices in the Québec Damage Insurance Brokerage Sector”. The study found that a large majority of the Québec brokerage network is not independent of insurers; brokers concentrate their business on one or two principal insurers. Additionally, the study found that certain commercial practices in Québec are not in the best interests of consumers.

a. (2 points)

Describe four business practices that have led to the findings of the study.

b. (0.5 point)

Briefly describe two regulatory actions proposed by the AMF to address its concerns.

## EXAM 7 – CANADA, SPRING 2010

11. (1.5 points)

*Citizens Insurance Co. v. Parsons* involved an insurance company questioning the constitutional validity of the Fire Insurance Policy Act (“the Act”).

a. (0.5 point)

Briefly describe two arguments made by the insurance company regarding the constitutional validity of the Act.

b. (1 point)

Describe how the Judicial Committee of the Privy Council ruled on each of the company’s arguments identified in part a. above.

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## EXAM 7 – CANADA, SPRING 2010

12. (1.75 points)

According to Baer and Rendall, “Cases on the Canadian Law of Insurance”:

a. (0.75 point)

Identify three levels of insurance regulation.

b. (0.25 point)

Identify the level of regulation favoured by both the insurance industry and superintendents of insurance in recent years.

c. (0.75 point)

Briefly describe three reasons why the level of regulation identified in part b. above is the favoured choice.

**EXAM 7 – CANADA, SPRING 2010**

13. (2 points)

a. (1 point)

Describe two similarities between social insurance and private insurance.

b. (1 point)

Describe two differences between social insurance and private insurance.

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## EXAM 7 – CANADA, SPRING 2010

14. (2 points)

According to the Report on the Five Year Review of Automobile Insurance released by the Financial Services Commission of Ontario (FSCO):

a. (0.5 point)

Describe how in-home assessments contribute to rising auto accident benefit claim costs.

b. (0.5 point)

Describe the recommendations made by FSCO to control the rise in costs mentioned in part a. above.

c. (0.5 point)

Identify the two recommendations made by FSCO associated with changes in deductibles when applied to tort claims.

d. (0.5 point)

Insurers are prohibited from using certain lifestyle factors in underwriting and risk classification. Briefly describe two of the quoting practices that are used to circumvent these prohibitions.

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## EXAM 7 – CANADA, SPRING 2010

15. (2 points)

For each of the following situations, explain whether the insurer is or is not in compliance with the Financial Services Commission of Ontario regulations outlined in Auto Bulletin A-02/05, “Prohibited Practices”:

a. (0.5 point)

Insurer ABC applies a 25% surcharge on commercial taxicab policies where the driver is self-employed.

b. (0.5 point)

Insurer DEF offers a 10% “stability discount” for auto insurance policyholders who have lived at their current address for five years or longer.

c. (0.5 point)

Insurer GHI only accepts auto insurance premium payments made by credit card.

d. (0.5 point)

Insurer JKL has the following auto insurance underwriting rule: “For insureds who receive a third notice of non-payment in a single policy term, we will cancel the policy regardless of whether the late payment is received.”

**EXAM 7 – CANADA, SPRING 2010**

16. (2 points)

a. (1 point)

In 2003, Alberta enacted a series of insurance reforms, which included the *Minor Injury Regulation* (the MIR) and the *Diagnostic and Treatment Protocols Regulation*. For each of the two reforms, provide a brief description of the reform and one reason for its enactment.

b. (1 point)

In the case of *Morrow v. Zhang*, the Court of Appeal of Alberta ruled that the MIR should not have been struck down at trial. Briefly describe four reasons behind this ruling of the Court of Appeal.

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## EXAM 7 – CANADA, SPRING 2010

17. (3 points)

a. (0.5 point)

Identify the two components of the National Flood Insurance Program (NFIP) other than flood insurance.

b. (1.5 points)

After Hurricane Katrina it was reported that the NFIP is not actuarially sound because it does not collect sufficient premium to build reserves to meet the flood losses expected over the long term, including periodic catastrophes. Describe the three causes of the premium shortfall.

c. (0.75 point)

Briefly describe the three layers of protection proposed as part of the National Catastrophe Plan (NCP).

d. (0.25 point)

Briefly describe how policyholders have reacted to the failures of the NFIP in the aftermath of Hurricane Katrina.

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## EXAM 7 – CANADA, SPRING 2010

18. (2.5 points)

The report “Options for Preparedness at PACICC” identifies potential sources of financing for PACICC in the event of the insolvency of an insurer.

a. (1 point)

Identify four funding mechanisms outlined in the report.

b. (1.5 points)

For any two of the funding mechanisms identified in part a. above, briefly describe their function with respect to:

- i. Increasing the capacity of PACICC to mitigate insolvencies
- ii. Ability to smooth costs for insurers
- iii. Effect on a participating insurer’s income volatility

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## EXAM 7 – CANADA, SPRING 2010

19. (2 points)

a. (1 point)

Describe the two objectives of the Canadian Medicare program.

b. (1 point)

Fully describe the inaccuracy of the perception that Canada's health care system is "fully public".

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## EXAM 7 – CANADA, SPRING 2010

20. (2.75 points)

a. (0.5 point)

Describe how benchmark rating has played a positive role in regulation of the Newfoundland and Labrador automobile insurance market.

b. (0.75 point)

Fully describe how benchmark rating may have influenced the need for automobile insurance product reform in Newfoundland and Labrador.

c. (1.5 points)

The Insurance Bureau of Canada (IBC) tabled a submission at the Newfoundland and Labrador Public Utilities Board's Automobile Insurance Benchmark Hearing (the Hearing).

i. (0.75 point)

Briefly describe three limitations in the benchmark regulations system noted in IBC's submission to the Hearing.

ii. (0.75 point)

Briefly describe IBC's recommendations for improvements to the benchmark regulations system.

**EXAM 7 – CANADA, SPRING 2010**

21. (2.25 points)

Identify and describe three optional insurance benefits offered to Canadian agricultural producers.

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## EXAM 7 – CANADA, SPRING 2010

22. (1 point)

Given the following information:

- Mr. Jones is the only driver on his vehicle.
- Mr. Jones's grid step on January 1, 2006 was +4.
- Mr. Jones's most recent at-fault accident occurred in May 2001.
- Mr. Jones has no driving convictions.
- The base premium for Mr. Jones's territory is \$1800.
- The grid percentages are given by the following table:

<u>Grid step</u>	<u>Percentage</u>
+5	150%
+4	140%
+3	130%
+2	120%
+1	110%
0	100%
-1	95%
-2	90%
-3	85%
-4	80%
-5	75%

a. (0.5 point)

Calculate Mr. Jones's grid premium under the Alberta grid system as of January 1, 2007.

b. (0.5 point)

Calculate Mr. Jones's grid premium under the Alberta grid system as of January 1, 2008.

## EXAM 7 – CANADA, SPRING 2010

23. (2 points)

According to the Office of the Superintendent of Financial Institutions' (OSFI's) test of preparedness for a catastrophic earthquake, a company must be able to cover its gross probable maximum loss (PML) at a particular return period.

a. (0.75 point)

Other than retention, identify the three financial resources that a company can use to cover its gross PML according to OSFI's test.

b. (0.25 point)

Briefly describe the limitation that is placed on the retention a company can use to manage its earthquake exposure within the OSFI test of preparedness.

c. (1 point)

Company ABC's gross PML is determined through use of a particular earthquake model.

A new version of the earthquake modeling tool will be released in 2010. Early estimates show that the new version of the software will increase PML estimates by 50% over the previous version.

Given the increase in PML estimates, briefly describe four ways (other than changing the PML) that the company can maintain its current Earthquake Reserve Required by OSFI.

## EXAM 7 – CANADA, SPRING 2010

24. (2.5 points)

a. (1 point)

Describe the application of the no-fault principle in Canadian workers' compensation and automobile insurance.

b. (0.75 point)

Identify three benefits provided to injured workers by workers' compensation.

c. (0.75 point)

Identify three benefits provided to accident victims by no-fault automobile insurance.

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## EXAM 7 – CANADA, SPRING 2010

25. (2.5 points)

a. (0.5 point)

For each situation below, provide a method that an actuary would use to derive the payment patterns for discounting of claim liabilities:

- i. Ultimate losses are strictly based on the paid loss development approach.
- ii. Ultimate losses are based on approaches other than the paid loss development approach.

b. (0.5 point)

Briefly describe two considerations an actuary should make in determining the cash flow of future reinsurance costs in relation to the discounting of premium liabilities.

c. (0.5 point)

Identify two options an actuary has regarding the discount rate used for the estimation of ceded claim liabilities.

d. (1 point)

For each option identified in part c. above, briefly describe one advantage that supports its use.

## EXAM 7 – CANADA, SPRING 2010

26. (3.5 points)

According to an insurance company's business plan, the company's prospective minimum capital test (MCT) ratio is as follows. All amounts are in thousands of dollars (\$000s).

	At December 31 of each year		
	2010	2011	2012
Capital Available	300,000	337,500	375,000
Capital Required	200,000	225,000	250,000
MCT ratio	150 %	150%	150%

Assume a tax rate of 0%. Ignore all discounting and PFAD calculations. Note that all ceded reinsurance treaties for this company are effective on July 1<sup>st</sup> of each year

The company has analyzed the following two scenarios as part of their Dynamic Capital Adequacy (DCAT) report:

### Scenario A

- Occurrence of Property Catastrophe loss on December 31, 2011
- Loss is 100,000 gross of reinsurance
- Loss is 50,000 net of reinsurance
- Reinsurance is through registered reinsurers

### Scenario B

- Decrease of 30% in value of the company's stock portfolio
- Increase of 100 basis points in yield curve
- Changes in stock portfolio and yield curve occur on December 31, 2011
- Impact on asset value is 45,000 (25,000 from stocks and 20,000 from bonds)
- All bonds are government-grade
- The company's stock portfolio is fully invested in common shares
- The company's investments are classified as Available for Sale.

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## EXAM 7 – CANADA, SPRING 2010

(26 con't)

a. (0.5 point)

Describe the main purpose of Dynamic Capital Adequacy Testing (DCAT).

b. (0.5 point)

Define the term “satisfactory financial condition”.

c. (1 point)

Answer the following questions with regards to Scenario A:

i. (0.5 point)

Calculate the effect of this scenario on the MCT ratio for 2011.

ii. (0.5 point)

Identify two possible ripple effects that could happen in 2012 based on this scenario.

d. (1.5 points)

Answer the following questions with regards to Scenario B:

i. (0.5 point)

Calculate the effect of this scenario on the MCT ratio for 2011.

ii. (0.5 point)

Identify two possible ripple effects that could happen in 2012 based on this scenario.

iii. (0.5 point)

Identify two possible management actions that the company could take to mitigate investment risk.

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## EXAM 7 – CANADA, SPRING 2010

27. (5.5 points)

On February 23, 2010, the Appointed Actuary (AA) of ABC Insurance Company, a federally-regulated company, discovers that a single large claim is missing from the company's claims system. The claim occurred on February 15, 2009.

The following information is available. All amounts are in thousands of dollars (\$000s).

Case reserve for claim as at 12/31/2009	\$5,800
Paid-to-date for claim as at 12/31/2009	\$2,000
Payment date for unpaid portion of claim	6/30/2011
Quota share cession to external reinsurer	50%
Reinsurance collected from reinsurer as at 12/31/2009	\$0
Margin for adverse deviation – claims development	10%
Margin for adverse deviation – investment return rate	1%
Margin for adverse deviation – reinsurance ceded	1%
Discount rate	4%

<< QUESTION 27 CONTINUED ON NEXT PAGE >>

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## EXAM 7 – CANADA, SPRING 2010

(27 con't)

a. (2 points)

Calculate the impact of including the claim on ABC's Gross, Ceded and Net Unpaid Claims as at December 31, 2009.

b. (2.5 points)

Calculate the impact of including the claim on each of the following items from the company's P&C-1 Annual Return as at December 31, 2009.

<b>Annual Return Page</b>	<b>Annual Return Item</b>
20.30	Net Claims and Adjustment Expenses
20.30	Net Income
20.10	Cash
20.10	Receivables - Other Insurers
20.10	Recoverable from Reinsurers – Unpaid Claims and Adjustment Expenses
20.10	Total Assets
20.20	Unpaid Claims and Adjustment Expenses
20.20	Retained Earnings
20.20	Total Liabilities and Equity

c. (1 point)

The AA has prepared a draft Appointed Actuary's Report as at December 31, 2009. The impact of the claim is greater than an applicable audit materiality threshold. Describe the actions that the AA must take under the following scenarios:

i. (0.5 point)

The impact of the claim is less than the AA's standard of materiality.

ii. (0.5 point)

The impact of the claim is greater than the AA's standard of materiality.

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## EXAM 7 – CANADA, SPRING 2010

28. (2.75 points)

UFO Insurance Company is a Canadian property and casualty insurance company. As at December 31, 2009, UFO holds the following investments. All amounts are in thousands of dollars (\$000s).

Asset	Classification	Market Value	Amortized Value
ABC Bond	Held to Maturity	1,000	900
DEF Bond	Held to Maturity	2,000	2,200
LMN Bond	Available for Sale	3,120	3,000

The investments were all purchased on March 1, 2009. Assume that UFO is an income-tax exempt corporation.

a. (0.75 point)

Calculate the value of each bond as it would be recorded on the balance sheet as at December 31, 2009.

b. (0.5 point)

There will be a large claim to be settled in the next six months. Identify which bond would be the best one to sell if needed to settle the claim. Briefly explain your answer.

c. (1 point)

Assume that in 2010 there is an increase in market interest rates. Describe the effect on Net Income if:

- i. Bonds ABC and DEF are used to support the policy liabilities
- ii. Bond LMN is used to support the policy liabilities

d. (0.5 point)

Calculate the total Accumulated Other Comprehensive Income for each bond as at December 31, 2009.

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## EXAM 7 – CANADA, SPRING 2010

29. (2 points)

Given the information below for ABC Insurance Company (all amounts are in thousands of dollars (\$000s)):

Line of Business	Net Unearned Premium Reserve	Selected Discounted Loss Ratio
Total Auto (excl. Facility)	5,000	75%
Personal Property	500	80%
Facility	250	95%

Selected Maintenance Expense Ratio	2.5%
Selected Internal Adjustment Expense Ratio	5.0%
Selected Contingent Commission Ratio	0.5%
Cost of Excess of Loss Reinsurance	5
Deferred Policy Acquisition Costs	1,000

Discounted Loss Ratios are calculated according to Accepted Actuarial Practice.

a. (1.75 points)

Calculate the equity in the Unearned Premium Reserve.

b. (0.25 point)

Based on part a. above, briefly describe any necessary changes to ABC's balance sheet.

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**EXAM 7 – CANADA, SPRING 2010**

30. (5 points)

The following information is available from the December 31, 2009 P&C-1 of ABC Insurance Company. All amounts are in thousands of dollars (\$000s).

**Liabilities & Equity (Page 20.20)**

Shares issued and paid	53,000
Contributed Surplus	15,000
Retained Earnings	5,000
Reserves	2,000
Accumulated Other Comprehensive Income (Loss)	(9,000)

**Minimum Capital Test (Page 30.70)**

<b>Capital Available</b>	
Subordinated Indebtedness and Redeemable Preferred Shares	0
Accumulated Other Comprehensive Income (Loss) on:	
Available for Sale Equity Securities	(9,000)
Available for Sale Debt Securities	(3,000)
Foreign Currency (Net of Hedging Activities)	0
Capital Available reported by Regulated Financial Institution Subsidiaries	200
Accumulated net after-tax fair value gains (losses) arising from changes in the company's own credit risk	50
Balance Sheet Value of Investments in Regulated Financial Institution Subsidiaries	25
<b>Minimum Capital Required</b>	
Balance Sheet Assets	18,000
Unearned Premiums/Unpaid Claims/Premium Deficiencies	35,000
Catastrophes	0
Capital Required reported by Regulated FI Subsidiaries	100
Structured Settlements, Letters of Credit, Derivatives and Other Exposures	3

**Reinsurance Ceded to Unregistered Insurers (Page 70.38)**

Name of Assuming Reinsurer	Unearned premiums ceded to assuming reinsurer	Outstanding Losses recoverable from assuming insurer	Receivable from assuming insurer	Payable to assuming insurer	Non-owned Deposits held as security from assuming insurer	Letters of credit held as security from assuming insurer
XYZ Re	2,000	3,000	100	5,000	400	0
DEF Re	500	700	200	0	0	200

<< QUESTION 30 CONTINUED ON NEXT PAGE >>

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## EXAM 7 – CANADA, SPRING 2010

(30 con't)

a. (0.5 point)

Calculate the Total Equity.

b. (1 point)

Calculate the Total Capital Available.

c. (1.5 points)

Calculate the Capital Required for Reinsurance Ceded to Unregistered Reinsurers.

d. (1.25 points)

Calculate the Minimum Capital Test (MCT) Ratio and briefly comment on any action that should be taken by ABC based on the result.

e. (0.75 point)

Federally regulated P&C insurance companies are required, at a minimum, to maintain an MCT ratio of 100%. Fully explain why OSFI believes that each institution should establish a target capital level above minimum requirements.

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## EXAM 7 – CANADA, SPRING 2010

31. (5.5 points)

The following information is available from the December 31, 2009 P&C-1 of UFO Insurance Company. All amounts are in thousands of dollars (\$000s).

<b>Balance Sheet (pages 20.10 and 20.20)</b>	
Cash	4,000
Bonds and Debentures	48,000
Common Shares	7,500
Real Estate	25,000
Unpaid Claims Recoverable	7,500
Unearned Premium Recoverable	1,000
Agents & Brokers Receivables	11,000
Other Assets	5,000
Agents & Brokers Payable	5,600
Unpaid Claims	72,500
Unearned Premium Reserve	3,400
Equity	27,500

<b>Income Statement</b>	
Net Written Premium	98,000
Decrease (Increase) in Net Unearned Premium	(3,000)
Claims and Adjustment Expenses	72,500
Acquisition Costs	14,500
General Expenses	11,000
Net Investment Income	4,500
Income Taxes – Total	510

- Other Comprehensive Income and Accumulated Other Comprehensive Income are both \$0.
- There has been no change in the balance sheet value of invested assets in 2009.

<< QUESTION 31 CONTINUED ON NEXT PAGE >>

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## EXAM 7 – CANADA, SPRING 2010

(31 con't)

a. (1.25 points)

Briefly describe each of the following ratios:

- i. Net Combined Ratio
- ii. Return on Equity
- iii. Net Underwriting Leverage Ratio
- iv. Net Loss Reserves to Equity
- v. Investment Yield

b. (4 points)

Based on the information given above for UFO Insurance Company, calculate the following ratios. For each ratio, briefly comment on whether the result is favourable.

- i. (0.75 point) Net Combined Ratio
- ii. (1.5 points) Return on Equity, according to the P&C-1 Annual Return
- iii. (0.5 point) Net Underwriting Leverage Ratio
- iv. (0.5 point) Net Loss Reserves to Equity
- v. (0.75 point) Investment Yield

c. (0.25 point)

Based on the ratios in part a. above, briefly describe whether UFO is in good financial health.

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## EXAM 7 – CANADA, SPRING 2010

32. (2.25 points)

You are given the following information from the P&C-1 as at December 31, 2009. All amounts are in thousands of dollars (\$000s). The company started writing business on January 1, 2008.

<b>P&amp;C-1 page 60.41</b>			
<b>Line</b>		<b>2008</b>	<b>2009</b>
40	Paid during 2008	700	
41	UCAE, end of 2008	800	
42	IBNR, end of 2008	315	
50	Paid during 2009	600	900
51	UCAE, end of 2009	500	700
52	IBNR, end of 2009	250	400

<b>P&amp;C-1 page 10.60</b>			
<b>Line</b>		<b>2008</b>	<b>2009</b>
6	Net premiums written	2,000	2,300
46	Investment yield	6%	7%

The unearned premium reserve (UPR) as at December 31, 2008 is 200. The UPR as at December 31, 2009 is 400.

a. (1 point)

Calculate the excess or deficiency ratio for accident year 2008 as at December 31, 2009.

b. (1.25 points)

Calculate the discounted loss ratio for accident year 2009 as at December 31, 2009.

**CONTINUED ON NEXT PAGE**

**EXAM 7 – CANADA, SPRING 2010**

33. (2.5 points)

a. (1 point)

Briefly describe four expected advantages of Solvency II over current frameworks.

b. (1.5 points)

i. (1 point)

Fully describe why diversification of underwritten risks is important to the insurance industry.

ii. (0.5 point)

Identify two examples of how diversification of underwritten risks occurs within an insurance organization.

## EXAM 7 – CANADA, SPRING 2010

34. (3.5 points)

a. (1.5 points)

The Canadian Institute of Actuaries' Standards of Practice identify a three-fold purpose of the *CIA/CICA Joint Policy Statement (JPS)*. Describe each of these three purposes.

b. (1.5 points)

Describe the responsibilities of management, the actuary, and the auditor with respect to an insurer's financial statements as described in the JPS.

c. (0.5 point)

For each of the actuary's and auditor's responsibilities described in part b. above, identify whether the actuary is acting in the role of the responding professional or the enquiring professional.

**EXAM 7 – CANADA, SPRING 2010**

35. (2 points)

a. (0.75 point)

Fully describe the concept of materiality according to the Canadian Institute of Actuaries' Standard of Practice.

b. (0.25 point)

Briefly describe the difference in the materiality level for Dynamic Capital Adequacy Testing work from the materiality level for valuation work.

c. (1 point)

Identify four characteristics of a company that can influence its selected materiality level.

## EXAM 7 – CANADA, SPRING 2010

36. (2.5 points)

According to the Office of the Superintendent of Financial Institutions' (OSFI's) Guideline on Annual Disclosures:

a. (1.5 points)

Identify and briefly describe three insurance risks associated with policy liabilities.

b. (1 point)

Identify and briefly describe two other risks significant to P&C insurance companies.

**END OF EXAMINATION**

# Exam 7C

## Law, Regulation, Government and Industry Insurance Programs, and Financial Reporting

May 4, 2010

### POINT VALUE OF QUESTIONS

QUESTION	VALUE OF QUESTION	SUB-PART OF QUESTION						
		(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	1.50	1.50						
2	2.50	1.00	0.50	1.00				
3	2.00	1.00	1.00					
4	2.50	1.00	0.50	1.00				
5	1.00	0.50	0.50					
6	1.50	0.75	0.75					
7	3.25	1.50	1.00	0.75				
8	1.50	1.00	0.50					
9	1.75	1.00	0.75					
10	2.50	2.00	0.50					
11	1.50	0.50	1.00					
12	1.75	0.75	0.25	0.75				
13	2.00	1.00	1.00					
14	2.00	0.50	0.50	0.50	0.50			
15	2.00	0.50	0.50	0.50	0.50			
16	2.00	1.00	1.00					
17	3.00	0.50	1.50	0.75	0.25			
18	2.50	1.00	1.50					
19	2.00	1.00	1.00					
20	2.75	0.50	0.75	1.50				
21	2.25	2.25						
22	1.00	1.00						
23	2.00	0.75	0.25	1.00				
24	2.50	1.00	0.75	0.75				
25	2.50	0.50	0.50	0.50	1.00			
26	3.50	0.50	0.50	1.00	1.50			
27	5.50	2.00	2.50	1.00				
28	2.75	0.75	0.50	1.00	0.50			
29	2.00	1.75	0.25					
30	5.00	0.50	1.00	1.50	1.25	0.75		
31	5.50	1.25	4.00	0.25				
32	2.25	1.00	1.25					
33	2.50	1.00	1.50					
34	3.50	1.50	1.50	0.50				
35	2.00	0.75	0.25	1.00				
36	2.50	1.50	1.00					
TOTAL	<u>88.75</u>							

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

The following represents a set of “sample solutions” to the Spring 2010 Exam 7C. It is comprised of actual solutions written by candidates, supplemented by other possible answers that would have received credit. This approach is meant to illustrate that in some cases there are many possible answers to certain questions and that many such answers were considered in grading.

Note that this does **not** necessarily represent all possible answers that would have received full credit, although we have made efforts to show as many such solutions as is practical. For some solutions, comments have been added in **bold** type to clarify the level of detail required to score full marks.

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

1.

i) Compensation to the victim for the wrong that has been done, by putting the victim (insofar as possible) in the same position he or she would have been in if the wrong had not been committed in the first place.

ii) Specific deterrence, because anyone who has been through a court action and has had to pay an award of damages and has also had to pay costs (as well as their own legal fees) will probably be careful to act in such a way that he or she will not get sued again.

iii) Punishment of the defendant if the tort judgment includes an award of punitive damages.

iv) General deterrence, especially if the defendant is a professional, or a business corporation that is sensitive to public scrutiny, or is a public body. People and corporations with public exposure often watch carefully what is happening to others in their field, in order to see what kind of behaviour they should avoid.

v) A means to redress an infringement of civil rights by a government body or public official. E.g. assault or battery (against police officers) or malicious prosecution (against Crown attorneys). The publicity of a lawsuit may shame a government into ending bad conduct or compensating and/or apologizing to the victim.

**(Note that use of a “key word” such as “specific deterrence” is not necessary if there is adequate description.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

2.

a. The reasonable person is:

- An imaginary legal person
- Is not perfect
- Has reasonable skill in the activity
- Acts with ordinary intelligence and prudence

b. The courts listen to evidence from real people who are knowledgeable in the activity which caused the harm.

**OR**

The court deduces what skill the reasonable person ought to have had in this situation, and how prudently the reasonable person would have acted.

c. Two circumstances are:

Activities that require special skill or knowledge. The court then uses the “reasonably competent practitioner” in the field as the standard.

Children under the age of majority. Children are normally held to the standard of care of the “reasonable child” of similar age, intelligence and experience.

**(Note: The question asks for the standard & then the circumstance. If candidate came up with a reasonably descriptive circumstance for the standard, then credit was given.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

3.

a.

Trespassers: one who enters the premises without permission or invitation of any kind. Entrants' presence is either unknown or objected to.

Licensee: A person whose presence is not objected to or challenged, but confers no benefit on the occupier.

Invitee: A person whose presence is not only permitted, but is either of benefit to the occupier or of mutual benefit to both.

Contractual Entrant: Liability is based on breach of contract rather than on the failure to carry out a tort based duty. The person contracts and pays for the use of premises.

**(Candidate must list two classes for full marks.)**

b.

Trespassers: Very low duty is owed - Required to take care not to cause positive or intentional harm.

Licensee: Use reasonable care to protect the licensee from unusual danger of which the occupier has or ought to have knowledge.

Invitee: At common law, the occupier needs to use reasonable care to prevent damage from unusual danger.

Contractual Entrant: Contractually based implied warranty that the premises are safe for the purposes contemplated by the occupier and the entrant / reasonably safe for use.

**(Candidates must use the two classes listed in a.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

4.

- a. Buyer Beware: if a person wants information relevant to the deal into which he is entering, the person bears the burden of asking for it. Specific questions must be answered truthfully, but otherwise, the party has no obligation to volunteer information.

Utmost Good Faith: the customer is bound by a duty of utmost good faith in negotiating the contract to disclose all matters relevant to the risk, whether or not the insurer has asked about them.

- b. **(For either of the two alternatives below, candidate should give enough detail to justify 0.5 points. Two of the major points for each alternative is enough.)**

Since insurance involves the transfer of risk, courts have decreed that parties to insurance contracts do not deal at arms' length. The nature of risk is so open-ended that it would be impossible for the insurer to contemplate in advance all the factors that might relate to it.

**OR**

The client is transferring risk of loss to the insurer. Some factors will influence the premium, or whether the insurer will write the risk at all. Some facts are known only to the customer; if they are not disclosed, the insurer may not discover the truth until after loss has happened.

c.

At policy inception stage:

An insurer is not permitted to take advantage of a customer's innocent non-disclosure if the insurer has entered into the contract knowing of the non-disclosure, and accepted the premium while expecting never to have to pay out the claim even if a loss occurs.

At claims stage:

- An insurer cannot take advantage of the customer's physical, emotional or financial vulnerability by unreasonably delaying or contesting a claim

**OR**

- Insurers may not decline an offer of settlement of damages without acting in good faith by taking into account the interests of the insured person.

**(Need two of three for full marks)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

5.
  - a. Moral Hazard:  
To allow profit will encourage people to either **engineer loss, or take less care** than they otherwise would.
  - b. As indemnity does not allow a claimant to profit from insurance by receiving more than what is lost, moral hazard is minimized.

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

6.

a) Factual expectation test: test whether the person who bought the insurance would, with reasonably measurable certainty, benefit from the continued existence of that subject matter or be prejudiced by its loss or destruction.

**(Note: Credit given for any two of “measurable certainty”, “continued existence”, “prejudiced”)**

b)

- i) The person taking out the insurance must have intended to insure interests other than his own
- ii) The terms of the contract must permit it.
- iii) The person taking out the insurance must have some interest in the insured property personally.

**(Note: Additional possible answer: “all other interests must be disclosed”)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

7.

a.

i) Special damages: damages where the amount of the loss or expense is known precisely before trial, either by simple calculation or by the use of formula. No estimation of amounts is required. Include: out-of-pocket expenses, loss of income between the time the harm was done to time of trial.

ii) General damages: damages awarded for harm done where the evaluation of the harm and the determination of the compensation to be paid cannot be done by the use of mathematical formula, or objective measurement of the loss. Example: damages for “pain and suffering”

b.

i) Punitive damages: damages awarded to explicitly punish or deter a defendant, when the defendant’s conduct is particularly outrageous. It is usually limited to claims arising in cases of intentional torts because malicious or premeditated acts are logically deserving of punishment. **(Note: key points are “punish/deter” and “outrageous conduct”. If one of these was missed, credit was given if second part (i.e. the “limited to claims” section) was mentioned.)**

ii) Aggravated damages: award made in situations where the defendant’s conduct is so outrageous that the harm done is worse than it otherwise would have been. Awarded to compensate the plaintiff for the effects of the outrageous behaviour. **(Note: key points are “conduct is so outrageous” and “worse than otherwise”. If one of these was missed, credit was given if second part (i.e. “compensate for effects” was mentioned.)**

**Note: The exam committee expected that some candidates might approach as follows:**

While punitive damages are awarded to punish and deter, aggravated damages are awarded to compensate the plaintiff for the effects of the outrageous conduct. **(Note: Received partial credit for describing difference between the two; more was required for full marks, as per above.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

c.

i) award not reduced for income tax since loss is “loss of earning capacity”

ii) not considered since loss is “loss of earning capacity”

iii) award not reduced for collateral benefits – courts unwilling to give defendant the benefit of the plaintiff’s other insurances

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

8.

a.)

(i) The current 30-year act places an **enormous evidentiary burden** on **both parties** when claims are brought long after the events giving rise to the claim.

- Key witness may no longer be available or have reliable memory
- Evidence may be incomplete or misleading
- If facts are lost due to time

(ii) In an action based on negligence, the accrual period occurs only when the plaintiff suffers actual damage. This can be a date far removed from the act or omission that caused the damage.

(iii) Issue with potential defendants with respect to both record keeping practices and the maintenance of sufficient insurance coverage.

(iv) Many other jurisdictions in Canada have a shorter ULP

**(Note: Question states “discuss two arguments”. Need enough detail for each of the two arguments. Item (iv) above was not originally contemplated but credit was given for it.)**

b.) -reduce the ULP to 10 years

-measure time from breach of duty instead of from actual discovery

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

- 9.
- a. This legislation establishes a **no-fault trust** from which claimants meeting **asbestos exposure and medical criteria** would be compensated for their injuries. The trust would be funded with \$140 billion of **contributions from corporate defendants, insurers and existing bankruptcy trusts**. If the funding ultimately proves to be insufficient, **claims could return to the courts**.
- b.
- a. How many claims will be filed – differing projections exist?
  - b. Will the medical criteria appropriately identify victims of asbestos disease?
  - c. Are the proposed awards appropriate?
  - d. Is the proposed funding adequate?
  - e. Will the allocation of funding from the various classes of contributors be viable and fair?
  - f. Will the fund be operated efficiently?
  - g. Will the new statute withstand constitutional challenges?
  - h. Will corporate defendants and their insurers/reinsurers support legislation that does not provide finality? (Also see footnotes for more details.... Give credit if it is deserved.)

**(Three of the above required for full marks)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

10.

**a.**

- Insurers grant **loans to firms** with which they do business – a firm may be required to provide the lending insurer with a minimum volume of premiums in order to satisfy the loan agreement, loans are often subject to conditions (such as first refusal and business retention) that severely limit a firm’s discretion as regards the products offered by it to consumers
- **Shares of a firm held by an insurer** – insurers seemed to hold directly or indirectly, more than 20% of a firm through other corporations. In a lot of the cases, an insurer holding shares in a firm has the most volume of business with that firm, which ultimately influences the products offered to consumers
- **Block transfers of business** from a firm to an insurer where a firm transfers a volume of clients from one insurer to another in exchange for additional remuneration that allows the firm to recover administrative costs of the transfer. **(OR conditions to a loan)**
- **Contingent commissions** offered to firms by insurers is a bonus added to the basic remuneration offered by insurers to brokerage firms. The commission is contingently calculated on meeting an objective related to the sale of the insurer’s products, the profitability of an insurance portfolio, and securing loyalty of clients for the insurer’s products

**(Judgment in awarding partial credit; full details from above are not required)**

**b.**

- AMF may regulate with a view to banning certain practices in the insurance sector
- impose the disclosure of relevant information to consumers
- introduce the concept of “independent broker” for firms

**(any two of the above)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

11.

a) Two arguments of the company:

- 1- Infringe federal power of trade and commerce **OR** ultra vires
- 2- Infringe rights of a federally incorporated company

b) Judicial Committee of the Privy Council ruled:

1- Within provincial powers as act pertains to **civil and property rights** and not trade and commerce.

**OR insurance contract issue and intra vires**

2- Does not infringe rights of corporations as it treats all incorporated companies equally

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

12.

a)

- 1- Legislation **OR** Law
- 2- Regulation
- 3- Guidelines (superintendents) **OR** Directives

b)

Guidelines by superintendent

c)

- More readily used to mask fundamental disagreement (to give appearance of solution while tolerating inconsistent behaviour in a way that legislation or formal regulation would not permit)
- More flexible or easier to change
- Less obtrusive (industry prefer to conform to the guidelines rather than being ordered to do so)
- Does not need approval from other parts of government.
- Less likely to be misinterpreted by the courts.

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

13.

a)

- ▶ Similar concepts and rules to protect the integrity of the insurance fund and to prevent double recovery
- ▶ Common problem of defining what events are covered and whether a particular loss has been caused by an insured event
- ▶ Difficulty of establishing a fair and efficient claims process and an appropriate system for valuing the loss
- ▶ Costs of providing insurance exist in both gov't and private insurance
- ▶ Principle of indemnity (**partial points only**)
- ▶ Insured not to profit / back to prior state (**partial points only**)

**(Two of above needed)**

b)

- ▶ Social insurance schemes tend to be universal in application as opposed to risk selecting
- ▶ Private insurance preoccupation of protecting the public from the social evil of gaming is of little significance in social insurance
- ▶ Since the government is the carrier of social insurance, there is no need for elaborate rules and machinery to guarantee the carrier's solvency.
- ▶ A different kind of administrative or judicial supervision is used in social insurance since all intermediaries are civil servants
- ▶ Government requirements for insurability are different
- ▶ Government has financial capacity to subsidize losses
- ▶ Some governments have felt obliged to offer insurance to those who can't find it in private market
- ▶ Sometimes appears easier for government to set up program quickly
- ▶ Belief that government can be more efficient provider

**(Two of above needed)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

14.

a.

- number of in-home assessments increasing
- multiple assessments on one case when it can be done through one assessment
- insurers bear additional cost of assessors who travel to assess claimants rather than have claimants travel to assessors
- in-home assessments now used for all types of benefits not just for attendant care and home modifications benefits
- not just reserved for the most seriously injured claimants
- can be / has been used as leverage tool by legal representatives to get settlement above real loss cost

**(any two of the above)**

b.

- recommendation by FSCO: limit in-home assessments to most seriously injured claimants
- recommendation by FSCO: in-home assessments should only be used to evaluate needs for attendant care services and home modifications

c.

Reduce the deductible and eliminate the deductible for fatal claims

d.

- insurers may still ask for the prohibited criteria when an insured is trying to get a quote from an insurer
- insurers may be using this information to decline quotes or delay providing a quote pending the receipt of a written application, or to redirect business to related companies
- for quotes made on-line, insurers may have predetermined responses for these criteria, if answers do not match these predetermined responses during the quoting stage, the insured may be further instructed to contact the insurer
- brokers may also be using similar quoting practices to screen risks perceived as borderline or risks which may have an adverse impact on the broker's business

**(any two of the above)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

15.

a) In compliance – commercial vehicles are excepted from the restriction on employment circumstances

b) Not in compliance – residence history is a prohibited classification variable **OR** lifestyle factors not allowed

c) Not in compliance – credit card possession is a prohibited consideration for issuance **OR** lifestyle factors not allowed

d) In compliance – specifically allowed by the regulation

**(Note: No credit for listing whether in compliance without actually giving some kind of explanation)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

16.

a)

- MIR: Imposes a \$4,000 cap on non-pecuniary damages for minor injuries; To reduce insurance premiums.
- DTPR:
  - Injured can seek treatment without approval of insurer and will receive pre-authorized payments. Also introduces protocols to diagnose sprains, strains, and whiplash associated disorders **(Need to say one of underlined)**
  - There were concerns that soft tissue injury victims were not treated appropriately OR did not receive any medical treatment, which was sometimes due to financial means.

b)

- The trial judge erred in finding that the MIR violates section 15 of the Charter.
- The trial judge erred in failing to analyze the insurance reforms as a complete package.
- The trial judge was correct that there is a distinction between minor injury claimants, but the reform actually provides medical benefits to the minor injury claimants in exchange for their reduced damages for pain and suffering.
- The trial judge also erred in concluding that damages for pain and suffering are of such fundamental societal significance that to interfere with them meant discrimination.
- The trial judge did not err by finding that the MIR does not violate section 7 of the *Charter*
- Section 5 of the MIR provides that if a claimant does not follow the DTPR and later suffers from a serious impairment, this will be considered to be a minor injury and therefore be subject to the \$4000 cap, unless the claimant can provide an acceptable reason why they didn't follow DTPR. This potential financial impact does not force a minor injury victim to accept a certain treatment, nor does it restrict healthcare practitioner's discretion.

**(Any four of the above. Note: Graders were also instructed to give appropriate credit for other arguments listed throughout the paper, if candidates justified the answer well.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

17.

a)

- 1) Introduce flood plain management
- 2) Develop flood hazard mapping

b)

- 1) Subsidized insurance rates – they were established below cost by Congress to encourage participation
- 2) Premiums were established to pay “average losses”, not “catastrophic losses”.
- 3) Many repetitive loss properties – insurance payments encourage rebuilding in the same location
- 4) Coverage only up to mortgage amount (underinsured)

**(Three of the above)**

c)

- 1) First layer – private insurance industry.
- 2) Second layer – state and regional catastrophe funds.
- 3) Third layer – federally funded reinsurance program

d)

- 1) There are thousands of lawsuits (including class actions) stemming from Hurricane Katrina against insurers, the industry, and FEMA.
- 2) Purchasing more insurance
- 3) Demanded coverage through Hurricane Katrina buy-in act
- 4) Upset and felt they deserved more compensation
- 5) Reduced demand/participation in the program
- 6) Wanted revamping of program so that it will be better next time

**(One of the above. Note that credit was given where appropriate for well-reasoned answers not strictly from the CPCU Flood paper, if the candidate demonstrated reasonable understanding of the issue.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

18.

a)

- General assessment
- Liquidity fund **OR** Compensation fund
- Line of Credit with members
- Insolvency reserves
- Liquidator agreements **OR** Liquidator loans

**(any four needed)**

b)

	Capacity	Cost smoothing	Income statement
Assessment	Increases	No	Volatile
Liquidity fund	Increases	Yes	Predictable
Lines of credit	Does not increase	No	Volatile
Insolvency reserves	Increases	No	Predictable
Liquidator arrangements	Does not increase	Yes	No impact

**Contrast any two of the mechanisms**

**(Note: table above is a sample format. Credit was given for candidate answers that were presented in a different format.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

19.

a)

- 1) To ensure that every Canadian has access to all medically necessary services regardless of their ability to pay for those services **OR** for all residents
- 2) To ensure that no Canadian suffers undue financial hardship as a result of having to pay health care bills.

b)

**(Four of the below)**

- System is a balance of public and private resources
- Doctors – private entrepreneurs
- Hospitals – 95% of these are private, not-for-profit institutions
- Medicare – source of public funding for medically necessary services
- Private insurers – provide funding for 30% of health care costs (e.g. prescriptions)

**(Note: graders were instructed to consider multiple papers for alternative answers.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

20.

a)

- has resulted in adjustments to premiums
- have helped maintain a balance between premiums and claim cost trends
- more availability (more insurers operate)
- less rate/premium volatility
- less need for reform

**(Two of the above)**

b)

- The need for reform has been reduced in NFLD
- Newfoundland has not experienced rapid increases in premiums since the benchmark rates are adjusted annually.
- Since rates and premiums are in line, NFLD has not experienced the availability issues that have plagued other provinces

c)

	i) Limitation	ii) Recommendation
Data	Normally 18 months out of date	Use more current data
Release dates of benchmark	Currently vary from year to year	Standardize the dates
Approvals outside benchmark	No legislated timeframe outside the benchmark process	Decrease time required for approval OR Wider band around the benchmark process

**(Note: Different answer formats acceptable.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

21.

- Protection against loss of quality – When an insured peril reduces the quality of the commodity below the level insured, the gross production is adjusted downward to reflect the loss in market value due to the lower quality level produced.
- Unseeded acreage benefit – available if excessive moisture during the planting seasons prevents a producer from seeding a crop.
- Reseeding/Replanting benefit – compensates producer for a portion of the incremental costs associated with having to reseed a crop when an insured peril destroys a crop early in the season and time permits for replanting.
- Emergency works benefit – compensates a producers for a portion of costs incurred to mitigate further damages (when an insured peril causes damage to a crop that could potentially lead to more extensive damage).
- Protection against losses to perennial plants that produce crops – compensates producers up to 80% of the average costs of re-establishing production or up to 80% of net income lost over the period of time it takes to re-establish production.
- Spot-loss peril protection – available for perils that cause damage that is readily discernable from other perils such as hail. Indemnity payments are not dependent upon the farm's overall production.

**(Three of the above)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

22.

a)

Grid level is  $+4 - 1 = +3$

Premium is  $1800 * 1.3 = 2340$

b)

Grid level is 0, since no at-fault claims for 6 consecutive years

Premium is  $1800 * 1 = 1800$

**(Note: If (a) was incorrect, then no penalty in (b) if candidate repeated the same mistake.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

23.

a)

- Earthquake premium reserve. (EPR)
- Documented reinsurance coverage.
- Approved capital market financing.

b)

Retention cannot exceed 10% of Capital and Surplus reported in the P&C1 or P&C2

c)

- May have capacity to increase retention if below 10% of capital
- Could purchase more reinsurance protection
- Increase premiums for earthquake coverage increasing the EPR amount
- Find alternative sources of capital market financing
- An agreement with the parent company

**(Four of the above)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

24.

a.

WC – an injured employee is guaranteed benefits for injury, disease, or death arising out of and in the course of employment in exchange for which the employee forfeits the right to sue the employer for negligence

Auto – an injured driver, passenger, etc. is guaranteed benefits for injury arising out of the use of automobiles in exchange for the right to sue the guilty party in tort

**(Note: for full credit, candidate must mention:**

- **Forfeit right to sue**
- **Guaranteed benefits (i.e. First Party)**

**Additionally, answer must deal with BOTH WC and Auto.)**

b.

WC – medical, rehabilitation treatment, lost earnings  
*or* health care, STD, LTD, rehabilitation, survivor

**(Three of above)**

c.

Auto – medical, funeral, disability, replacement, rehabilitation, death, attendant care, etc....

**(Three of above)**

**(Note: The intent of parts (b) and (c) was to identify three types of insurance benefits that these insurances provide to claimants. Some candidates interpreted “identify three benefits” to mean “identify three *advantages*...”. The Exam committee recognized that the wording of the question was unintentionally ambiguous and that, given the wording, it was reasonable for candidates to make this interpretation. Therefore, credit for the “advantages” approach was also given where appropriate.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

25.

- a) i) can be derived directly from the selected paid loss development factors
- ii) Historical ratios of paid losses at various maturity dates to selected ultimate losses
  
- b) - timing of payment of applicable reinsurance premiums
  - earning period of the unexpired portion of in-force policies
  
- c) - Discount rate selected for net present value (ie. a portfolio rate)
  - Risk free rate
  - Discount rate used by the assuming company if affiliated

**(Two of above)**

- d) - Discount rate selected for net present value (ie a portfolio rate) – simple assumption if the assets held by the assuming company to support its policy liabilities are similar to the ceding company's investment portfolio
  - Risk free rate – This is conservative as the risk free rate tends to be lower than portfolio rate
  
  - Discount rate used by the assuming company – this is the most desirable because technically the ceded liabilities are supported by the assets of the assuming insurer, but practically, this may be difficult to obtain

**(Two of the three above)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

26.

- a) identification of possible threats to the financial condition of the insurer and appropriate risk management or corrective actions to address those threats
- b) If insurer is able to meet all its future obligations under the base scenario and all plausible adverse scenarios and under the base scenario it meets the minimum regulatory capital requirement

c)

(i)

Capital available:  $337,500 - 50,000 = 287,500$

Capital required =  $225,000 + 5\% * 50,000 + 2\% * 50,000 = 228,500$

MCT ratio =  $287,500 / 228,500 = 125.82\%$

(ii)

- insolvency of one or more reinsurers accounting for a significant portion of the insurer's reinsurance coverage;
- increases in the policy liabilities related to current reinsurance contracts which are swing-rated, have variable commission or require reinstatements;
- loss of reinsurance coverage for remainder of term;
- increases in reinsurance rates or non-availability of reinsurance at the next renewal;
- post-event inflation following a catastrophe resulting in increases to the ultimate cost of unpaid claims as well as future claims;
- post-event inflation in regions not directly affected by the catastrophic event;
- forced sale or liquidation of assets;
- increased PACICC assessments resulting from failure of other insurers;
- rating agency downgrade.

**(Two of above)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

(26 con't.)

d)

(i)

Capital available:  $337,500 - 45,000 = 292,500$

Capital required =  $225,000 - 15\% * 25,000 - 0.0\% * 20,000 = 221,250$

MCT ratio =  $292,500 / 221,250 = 132.20\%$

(ii)

- forced sale or liquidation of assets
- significant positive or negative cash flows impacting the company's liquidity position
- rating agency downgrade
- liquidity crisis caused by large, sustained default losses
- increase in the frequency or severity of claims due to the deteriorating economic conditions
- change in the discount rate used for calculating actuarial present value of policy liabilities
- negative change on derivative positions
- default by counter-party on derivatives

**(Two of above)**

(iii)

- selling or reinvesting assets
- changing the investment strategy
- repositioning derivative tools
- reducing the amount of business underwritten
- implementing rate increases, where possible
- reducing costs through layoffs, consolidation of branch offices

**(Two of above)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

27.

a)

Gross AAP unpaid claim at December 31, 2009:

$$5,800[0.10*1.04^{(-1.5)}+1.03^{(-1.5)}] = 6,095.318$$

Net AAP unpaid claim at December 31, 2009:

$$5,800/2[(0.10+.01)*1.04^{(-1.5)}+1.03^{(-1.5)}] = 3,075.002$$

Ceded AAP unpaid claim at December 31, 2009:

$$6,095.318-3,075.002= 3020.316$$

b) Changes to financials at December 31, 2009:

20.30 Net Claims & AdjExp increase by  $3,075.002 + 2,000/2 = 4,075.002$

20.30 Net Income decreases by \$4,075.002

20.10 Cash decreases by \$2,000 (decrease in bonds/stocks etc. also an acceptable answer)

20.10 Receivables from other Insurers increases \$1,000

20.10 Unpaid Claims recoverable from reinsurers increases \$3,020.316

20.10 Total Assets increase \$2,020.316

20.20 Unpaid Claims increase by \$6,095.318

20.20 Retained Earnings **OR** Total Equity decrease by \$4,075.002

20.20 Total Liabilities and Equity increase by \$2,020.316

c)

i) The AA does not need to change her analysis because the event is not material to her valuation. She must inform the auditor because the impact of the claim is greater than a relevant audit materiality threshold.

ii) The AA must revise her analysis to include the missing claim. Because the event is due to an error, she must inform management and the auditor.

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

28.

(a) ABC Bond: 900 (HTM are carried at Amortized Value)

DEF Bond: 2,200

LMN Bond: 3,120 (AFS are carried at Market Value)

(b) LMN Bond.

If either ABC Bond or DEF Bond is to be sold, the other held to maturity bond will have to be reclassified as available for sale for at least two years.

(c)

i. For Held for Maturity (bonds ABC, DEF), the discounted incurred loss would remain the same as it is discounted using the book yield, which is not impacted by the market interest rate. The investment income would remain the same as the unrealized gain/loss is not recognized. Thus, no impact on Net Income.

ii. For Available for Sale (bond LMN), the discounted incurred loss would decrease due to the increase in discount rate. The investment income would stay the same as the unrealized gain/loss is not recognized. Thus, the Net Income would increase.

(d)

LMN:  $3,120 - 3,000 = 120$

ABC & DEF: No AOCI for HTM bonds.

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

29.

a.

Expected claims and ALAE for voluntary business =

$$5,000 * .75 + 500 * .8 = 4,150$$

Expected claims and ALAE for Facility =

$$250 * .95 = 237.5$$

Maintenance expense =  $0.025 * (5,000 + 500) = 137.5$  (**note: only voluntary business would incur maintenance expense**)

Internal adjustment expense =  $0.05 * 4,150 = 207.5$  (**note: only voluntary business would incur internal adjustment expense**)

Contingent commission =  $0.005 * (5,000 + 500) = 27.5$  (**note: only voluntary business would incur contingent commission**)

Equity in UPR = (Total UPR – Total expected claims and ALAE – Maintenance expense – Internal adjustment expense – contingent commission – cost of excess of loss)

$$\begin{aligned} &= 5,000 + 500 + 250 - 4,150 - 237.5 - 137.5 - 207.5 - 27.5 - 5 \\ &= 985 \end{aligned}$$

b.

EQUPR < DPAC; must reduce DPAC to 985.

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

30.

a)

Total Equity =

Shares issued and paid  
+ Contributed Surplus  
+ Retained Earnings  
+ Reserves  
+ Accumulated Other Comprehensive Income

$$= 53,000 + 15,000 + 5,000 + 2,000 - 9,000 = 66,000$$

**(Note: The Exam committee found an issue with the data in the question as posed. The AOCI on page 20.20 did not equal the total AOCI on page 30.70. Therefore, full credit was given for using either of the two AOCI amounts.)**

Also accepted

$$= 53,000 + 15,000 + 5,000 + 2,000 - 9,000 - 3,000 = 63,000$$

As AOCI given (9,000) in question did not match the sum of components (3000) and (9,000)

b)

Capital Available =

Total Equity less Accumulated Other Comprehensive Income  
+ Subordinated indebtedness and preferred shares  
+ AOCI on available for sale equity securities  
+ AOCI on available for sale debt securities  
+ Foreign Currency, net of hedging activities  
+ Capital Available of Regulated Financial Institution Subsidiaries  
- Accumulated net after tax fair value gains (losses) arising from changes in the company's own credit risk  
- Balance Sheet Value of Investments in Regulated FI Subsidiaries  
- Assets with Capital Requirement of 100%

Assets with capital requirement of 100%:

Recoverables in excess of Non-owned deposits from reinsurance ceded to unregistered reinsurer:

= UPR + O/S Loss recov + receivables – payables – non-owned deposits, if positive

$$\text{For XYZ Re: Max } (2000 + 3000 + 100 - 5000 - 400, 0) = 0$$

$$\text{For DEF Re: Max } (500 + 700 + 200 - 0 - 0, 0) = 1400$$

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

So for Capital Available we have:

$$= (66,000 + 9,000) + 0 - 9,000 - 3,000 + 200 - 50 - 25 - 1400$$

$$= 61,725 \text{ (note that this is the same answer regardless of which AOCI was used in Part (a), as } 66,000 + 9,000 = 63,000 + 9,000 + 3,000.)$$

**(Note: Focus is on Capital Available. Partial marks were still given if the “Assets with capital requirement of 100%” calculation was ignored. Full credit for (b) if the answer to (a) was incorrect but used correctly in (b).)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

(30 con't.)

c)

For XYZ Re: 10% margin on unearned premiums and outstanding losses recoverable =  $(2000+3000)*.1 = 500$

For DEF Re: 10% margin on unearned premiums and outstanding losses recoverable =  $(500+700)*.1 = 120$

The margin requirement for each unregistered reinsurer may be reduced to a minimum of 0 by letters of credit and by deposits held as security that are in excess of the amount of ceded reserves, both divided by 1.5.

Deposits available to apply to margin = Non-owned Deposits held as security from assuming insurer - UPR Ceded to assuming reinsurer - O/S Losses recoverable from assuming insurer - Receivable from assuming insurer + Payable to assuming insurer (where positive)

$$= \max((400 - 2000 - 3000 - 100 + 5000), 0) = 300 \text{ for XYZ}$$
$$= \max((0 - 500 - 700 - 200 + 0), 0) = 0 \text{ for DEF}$$

Margin required = 10% margin on unearned premiums and outstanding losses recoverable – (Deposits available to apply to margin + Letters of credit held as security from assuming insurer)/1.5 (where positive)

$$= \max((500 - (300+0))/1.5, 0) = 300 \text{ for XYZ}$$
$$= \max((120 - (0 + 200))/1.5, 0) = 0 \text{ for DEF}$$

d) **(Note: graded consistently with other parts, eg. Using wrong capital avail.)**

MCT = Capital Available/Capital Required

Capital Available = 61,725 (from part b)

Capital Required = 18,000 + 35,000 + 0 + 300 + 100 + 3 = 53,403

MCT % =  $61,725/53,403 = 116\%$ .

As the MCT ratio is smaller than the OSFI supervisory ratio of 150%, ABC must inform OSFI immediately that they anticipate falling below the supervisory target capital level.

ABC must lay out their plans, for OSFI approval, to return to their target level.

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

(30 con't.)

e)

This is to cope with volatility in markets and economic conditions, innovations in the industry, consolidation trends and international developments and to provide for risks not explicitly addressed in the calculation of policy liabilities or the MCT. Such risks include systems, data, strategic, management, fraud, legal and other operational and business risks. An adequate target capital level provides additional capacity to absorb unexpected losses beyond those covered by the minimum MCT and to address capital needs through ongoing market access.

**(Any three points from above paragraph needed for full marks)**

**Partial points given to:**

- different risk profile
- cushion/buffer
- unexpected adverse situation

**(Note: These are really very summarized versions of the answer in the paragraph above; more explanation needed for full credit)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

31.

a. **Full descriptions not required but at least one key point should be mentioned for each.**

- i. Net Combined Ratio  
Total underwriting expenses as % of premiums earned. Ratio < 100% = U/W profit. Company still likely profitable with CR in 100% to 105% range because it excludes investment income & capital gains.
- ii. Return on Equity  
Measures return to shareholders. Net income as % of equity. Important to look for sustainability of earnings. May be high due to relatively low equity; use in conjunction with other equity-based tests.
- iii. Net Underwriting Leverage Ratio  
Net premiums to equity. Attempts to measure company's U/W exposure relative to the capital, indicating possible capital strain. Utility of ratio is mitigated by fact that volume of written premiums is imperfect proxy for exposure.
- iv. Net Loss Reserves to Equity  
Given the inherent uncertainty in estimating claim liabilities, high ratio may expose insurer to financial stress should the estimate be inadequate. When ratio extremely high, small % deviation in O/S reserves can have devastating effects on solvency.
- v. Investment Yield  
Measures income & realized capital gains relative to deployed assets.

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

(31 con't)

b.

i. Net Combined Ratio =  $(72,500 + 14,500 + 11,000) / (98,000 - 3,000)$   
= 103.2%

Ratio > 100%, so generates an Underwriting Loss.

**Alt:** Below 105% thus favourable (since excludes investment income & capital gains).

ii. Return on Equity, P&C-1 formula

$$\begin{aligned} \text{Net Income} &= 98,000 - 3,000 - 72,500 - 14,500 - 11,000 + 4,500 - 510 \\ &= 990 \end{aligned}$$

$$\text{Beginning Equity} = 27,500 - 990 = 26,510$$

$$\text{Average Equity} = (26,510 + 27,500) / 2 = 27,005$$

$$\text{ROE} = 990 / 27,005 = 3.67\%$$

Ratio is below minimum acceptable range of 5.4%.

iii. Net Underwriting Leverage Ratio =  $98,000 / 27,500 = 356.36\%$

High leverage ratio (> 300%) indicates capital strain and vulnerability.

iv. Net Loss Reserves to Equity =  $(72,500 - 7,500) / 27,500 = 236.36\%$

This is higher than the maximum of 200%.

v. Investment Yield

$$= 2 * (4,500) / [2*(4,000 + 48,000 + 7,500 + 25,000) - 4,500] = 5.471\%$$

This company has a (moderately) positive return on its investments.

c. Based on these ratios, the financial health of the company is not good.

**(Note: gave credit for any answer consistent with the findings in (b) above.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

32.

a.

Investment income in 2009

$$\begin{aligned} &= (800 + 315 + 500 + 250) / 2 * 7\% \\ &= 65.28 \end{aligned}$$

Excess/(deficiency) amount

$$\begin{aligned} &= (800 + 315) + 65.28 - (600 + 500 + 250) \\ &= -169.48 \end{aligned}$$

Excess/(deficiency) ratio

$$\begin{aligned} &= -169.48 / (800 + 315) \\ &= -15.2\% \end{aligned}$$

b.

Cumulative investment income from unpaid claims reserves

$$\begin{aligned} &= (700 + 400) / 2 * 7\% \\ &= 38.5 \end{aligned}$$

Earned Premium

$$\begin{aligned} &= 2,300 + (200 - 400) \\ &= 2,100 \end{aligned}$$

Investment income from UPR @ Dec. 31, 2009

$$\begin{aligned} &= (200 + 400) / 2 * 7\% \\ &= 21 \end{aligned}$$

Discounted LR

$$\begin{aligned} &= (900 + (700+400) - 38.5) / (2,100 + 21) \\ &= 92.48\% \end{aligned}$$

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

33.

a.

.

**Any four below:**

- Greater ability of regulatory/solvency system to cope with diversity of risks in typical insurance portfolios
- Ability to ensure a high standard of risk assessment and efficient capital allocation
- Development of level playing field across Europe
- Ensure that companies improve their risk management practices and hold appropriate levels of capital
- Give policyholders better protection against risk of company failure
- More efficient allocation of capital across the industry
- Lead to reduced costs for consumers, increased costs, and transparency
- Incentives for industry to adopt best practice in risk management
- Better protection against risk of company failure – lower risk of company failure
- Ensure that capital held is appropriate for risks undertaken
- Promoting better risk management practices
- More efficient capital allocation across the industry
- Reduced cost for consumers
- Improved product development and pricing
- Increased competition and transparency
- Greater confidence in industry
- Greater financial stability of industry
- Greater incentive for diversification
- Comprehensive risk management
- Could use either an internal model or standard approach
- Better disclosure
- Fairer price
- Define qualitative requirement for operating risk

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

(33 con't.)

b. **Any four of the following:**

- Not all risk will occur at the same moment
- Risks are independent
- Large number of risks is unlikely to suffer claims on all of them at once
- The larger the number of risks, the more likely that the actual level of losses will be close to expected levels (law of large numbers)
- Not to put all eggs in one basket
- One single event won't affect all insureds
- Bad experience of some risks needs to be offset by the good experience of others
- Because it reduces the covariance of losses
- Different risks will not all experience adverse results at the same time
- Minimize correlation among risks
- Risks are more predictable if volume is higher
- Reduce risks of insolvency as risk are more spread out
- Too much concentration in a particular area make insurer vulnerable to insolvency if particular accident/loss occurs
- Results in lower requirements for capital requirements

c. **Any two of the following:**

- between individual risks within a portfolio
- between different types of risk (**also gave credit if specific example is given, e.g. different policyholders: male, female, young, old**)
- between different geographical regions
- between legal entities in a group

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

34.

a.

- Communications between actuaries involved in the preparation of financial statements, and auditors, regarding their respective responsibilities;
- How those actuaries and auditors would interact in carrying out their respective responsibilities; and
- How their respective responsibilities may be disclosed to readers of financial statements.

b.

- Management: Responsible for the financial statements / Ensure accuracy of financial statements
- Actuary: responsible for assessing the sufficiency and reliability of the data used in the valuation of actuarially determined amounts in the financial statements. May consider the work of the auditor with respect to data integrity and controls.
- Auditor: responsibility to express an opinion on the fairness with which the financial statements present the financial position, results of operations and cash flows in accordance with the applicable financial reporting framework, which will normally be generally accepted accounting principles. When the financial statements include amounts determined by an actuary, the auditor considers the work of the actuary as part of the audit evidence supporting the actuarial valuation.

**(Note: the question asks what the responsibilities of the various parties are, according to the Joint Policy Statement. The actuary's responsibility *within the scope of the JPS* is to assess the data, as per the model solution above; evaluating the policy liabilities is NOT within the scope of the JPS.)**

c.

- Actuary's responsibility: actuary is enquiring professional
- Auditor's responsibility: actuary is responding professional

**Note:** In part (b), if the candidate answered that the actuary's responsibility is to evaluate the policy liabilities, then for part (b) the actuary is acting as a responding professional under the actuary's responsibility. **Grading between parts (b) and (c) was consistent.**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

35.

- a) An omission, understatement or overstatement is material if the actuary expects it materially to affect either:
- User's decision making or
  - User's reasonable expectations
- b) One of the following:
- i. For DCAT work, the materiality level is expected to be less rigorous than for valuation work
  - ii. The materiality level for DCAT work should be higher than the valuation work (**i.e. a higher dollar amount; this is a rewording of (i) above**)
  - iii. For DCAT, it is related to statutory surplus or solvency benchmark ratio; for valuation, it is related to net income and net capital
- c) It varies according to:
- Size of the company
  - Entity's access to capital
  - Stage of organizational life cycle
  - Type of business ( e.g. mutli-line vs. single line, personal lines vs. commercial lines)
  - Net retention / presence of reinsurance
  - Net income / Company performance
  - Financial strength / financial position
  - Solvency / benchmark ratio
  - Earnings per share
  - Equity / surplus / capital
  - Net worth
- (Four of the above)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

36.

a.

- Underwriting Risk: Exposure to financial loss resulting from the selection and approval of risk to be insured, the reduction, retention and transfer of risks;
- Liability Risk: Exposure to risk on the reserving and adjudication of claims and the management of contractual and non-contractual product options;
- Catastrophe Risk: risk that the enterprise is exposed to major catastrophe;
- Reinsurance Risk: risk that a ceding enterprise could suffer a loss or liability in the event that a reinsurer is unable to meet its obligations;
- Interest Rate Risk: risk that the value of a financial instrument will fluctuate due to changes in market interest rates and that such movements will have an adverse effect on the financial condition of the enterprise.

**(Note: In the Disclosures paper, Underwriting and Liability risk are combined. Full credit was given if candidates combined them appropriately.)**

b.

- Credit Risk: risk that one party to a financial instrument will fail to discharge an obligation and cause the other party to incur a financial loss;
- Foreign Exchange Rate Risk: risk that the value of a financial instrument will fluctuate as a result of changes in foreign exchange rates;
- Liquidity Risk: risk that an entity will encounter difficulty in raising funds to meet cash flow commitments associated with financial instruments.

**(Note: Candidates MUST answer according to the OSFI paper, as per the question. Different wordings were OK, and were graded appropriately.)**

## EXAM 7 – CANADA, SPRING 2010 – Model Solutions

36.

a.

- Underwriting Risk: Exposure to financial loss resulting from the selection and approval of risk to be insured, the reduction, retention and transfer of risks;
- Liability Risk: Exposure to risk on the reserving and adjudication of claims and the management of contractual and non-contractual product options;
- Catastrophe Risk: risk that the enterprise is exposed to major catastrophe;
- Reinsurance Risk: risk that a ceding enterprise could suffer a loss or liability in the event that a reinsurer is unable to meet its obligations;
- Interest Rate Risk: risk that the value of a financial instrument will fluctuate due to changes in market interest rates and that such movements will have an adverse effect on the financial condition of the enterprise.

**(Note: In the Disclosures paper, Underwriting and Liability risk are combined. Full credit was given if candidates combined them appropriately.)**

b.

- Credit Risk: risk that one party to a financial instrument will fail to discharge an obligation and cause the other party to incur a financial loss;
- Foreign Exchange Rate Risk: risk that the value of a financial instrument will fluctuate as a result of changes in foreign exchange rates;
- Liquidity Risk: risk that an entity will encounter difficulty in raising funds to meet cash flow commitments associated with financial instruments.

**(Note: Candidates MUST answer according to the OSFI paper, as per the question. Different wordings were OK, and were graded appropriately.)**