INSTRUCTIONS TO CANDIDATES

1. This 100 point examination consists of 81 questions divided into two sections. Section I contains 36 true/false questions worth .5 point each. Section II contains 45 problem and essay questions worth a total of 82 points.

2. To answer the true/false questions, use the short-answer card provided and a number 2 or HB pencil. Mark your short-answer card during the examination period. No additional time will be allowed for this after the exam has ended. Please make your marks dark and fill in the spaces completely. Fill in that it is Spring 2002, and the exam number, 7-Canada.

Darken the spaces corresponding to your Candidate ID number. Five rows are available. If your Candidate ID number is fewer than 5 digits, include leading zeros. (For example, if your Candidate ID number is 987, consider that your Candidate ID number is 00987, enter a zero on the first row, 0 on the second row, 9 on the third row, 8 on the fourth row, and 7 on the fifth [last] row.) Please write in your Candidate ID number next to the place where you darken the spaces for your Candidate ID number. Your name, or any other identifying mark, must not appear on the short-answer card.

For the true/false questions, mark “A” for “true” on the short-answer card, and mark “B” for “false” on the short-answer card. In grading the true/false questions, the point value of the question will be subtracted for each incorrect answer. No points will be added or subtracted for responses left blank.

3. For the problem and essay questions, the number of points for each full question or 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 other colors.

Write your Candidate ID number and the examination number, 7C, 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 on only the lined side of the paper, and be careful to give the number of the question you are answering on each sheet.

The answer should be concise and confined to the question as posed. When a list of a specific size is requested, do not offer more items in your list than the number requested. For example, if you are requested to list three items, only the first three responses will be graded.

CONTINUE TO NEXT PAGE OF INSTRUCTIONS

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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.

4. Do all problems until you reach the last page of the examination where “END OF EXAMINATION” is marked.

5. 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.

6. 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.

7. At the beginning of the examination, check through the exam booklet for any missing or defective pages. The supervisor has additional exams for those candidates who have defective exam booklets.

8. Candidates must remain in the examination center until two hours after the start of the examination. 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.

9. At the end of the examination, place the short-answer card and all answer sheets in the Examination Envelope. Please insert your answer pages in your envelope in question number order. Insert a numbered page for each question, even if you have not attempted to answer that question. BEFORE YOU TURN IN THE EXAMINATION ENVELOPE TO THE SUPERVISOR, BE SURE TO SIGN IT IN THE SPACE PROVIDED ABOVE THE CUT-OUT WINDOW.

Anything written in the examination booklet will not be graded. Only the short-answer card and the answer sheets will be graded.

10. 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 by contacting the CAS Office.

All extra answer sheets, scrap paper, etc., must be returned to the supervisor for disposal.

CONTINUE TO NEXT PAGE OF INSTRUCTIONS
11. 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 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.

12. An examination survey and postage-paid reply envelope are included with the examination. No postage is necessary for surveys mailed within the United States. Candidates mailing the survey outside the United States should use the courtesy reply envelope distributed by your exam supervisor. Please complete the survey and leave it with the examination supervisor, or take the survey and envelope with you when leaving the examination center. Please submit the survey to the CAS Office by May 28, 2002. Please do not enclose the survey in the Examination Envelope.

END OF INSTRUCTIONS
According to Linden, *Canadian Tort Law*, the courts have held that a professional association of accountants has a duty to notify clients that a member has been disciplined.

According to Linden, *Canadian Tort Law*, courts rely heavily on precedent cases in deciding whether conduct was negligent.

According to Linden, *Canadian Tort Law*, plaintiffs may not recover damages unless defendants owe them a duty of care.

According to Klar et al., *Remedies in Tort*, where a defendant has been subject to criminal sanctions for his conduct, the courts may award punitive damages.

According to Klar et al., *Remedies in Tort*, economic loss must be sustained in order for nominal damages to be awarded.

According to Klar et al., *Remedies in Tort*, after assessing the plaintiff's loss of earning capacity, the court must adjust for contingencies.

According to McDonald, *Life Insurance Laws of Canada (Common Law Provinces)*, if a provincially incorporated company conducts business in a province other than where it was incorporated, the province where the business is conducted will usually supervise the company's affairs.

According to Brown, *Canadian Insurance Contracts in a Nutshell*, a private passenger automobile insurer may not insist on payment of premiums before a contract to which it has agreed takes effect.


According to Brown, *Canadian Insurance Contracts in a Nutshell*, ambiguities in insurance policies are to be construed against the insurer.

According to Hall, *Mercer Handbook of Canadian Pension and Benefit Plans*, the pension paid under the Old Age Security Act is reduced by amounts paid from the Quebec Pension Plan.

According to Insurance Service Offices, Inc., "Superfund and the Insurance Issues Surrounding Abandoned Hazardous Waste Sites," in recent years potentially responsible parties (PRPs) have taken the lead in more site cleanups than has the Environmental Protection Agency (EPA).

According to the Office of Superintendent of Financial Institutions in Canada, "Earthquake Exposure Sound Practices Guideline," gross probable maximum loss is the probable maximum loss amount before deductibles.
14. According to Hall, Mercer Handbook of Canadian Pension and Benefit Plans, the evolution of employer health plans was primarily driven by the desire to provide employees with enhanced and tax-effective compensation.

15. According to Hall, Mercer Handbook of Canadian Pension and Benefit Plans, the Workers' Compensation spousal survivor benefit generally ceases upon remarriage.


18. According to "Compensation Plan for Property and Casualty Insurers," the compensation plan for property and casualty insurers will respond to claims for unearned premiums.

19. According to the Insurance Accounting and Systems Association, Property-Casualty Insurance Accounting, the predominant GAAP practice is to state loss reserves without discounting.

20. According to Insurance Accounting and Systems Association, Property-Casualty Insurance Accounting, an increase in the excess of book over market value for stocks increases policyholders' surplus.


22. According to Canadian Council of Insurance Regulators, "Explanatory Notes for the Minimum Capital Test (MCT)," the basis of the MCT will change from a capital adequacy approach under current property and casualty solvency tests to an assets required approach.

23. According to Canadian Council of Insurance Regulators, "Explanatory Notes for the Minimum Capital Test (MCT)," the evaluation of optimal capital levels is a process that is highly integrated with the determination of minimum capital levels under the MCT.


25. According to Feldblum, "The Insurance Expense Exhibit and the Allocation of Investment Income," the reserves shown on Part II of the IEE are discounted.

26. According to Insurance Information Centre of Canada, "Direct Expense Report, Instructions, Forms and Results," practically all general insurance companies record their expenses by geographic location.

CONTINUED ON NEXT PAGE

28. According to Insurance Bureau of Canada, “Accurate Financial Statements for P&C Insurers, The Role of Discounting Loss Reserves,” one of the adjustments made by the Canadian Customs Revenue Agency on reported earnings to calculate taxable income is a mark-to-market valuation of equity investments.

29. According to Office of Superintendent of Financial Institutions Canada, “Accounting for Property Casualty Actuarial Liabilities,” OSFI will require changes to the current financial statement presentation once discounting of actuarial liabilities is required.


31. According to Canadian Insurance Accountants Association, “Fair Value of Claims Liabilities,” in valuing general insurance liabilities, the fair value basis is the same as the actuarial present value basis if the discount rate used is the same.

32. According to Cantin and Trahan, “Study Note on the Actuarial Evaluation of Premium Liabilities,” premiums should be earned on a pro-rata basis over the policy period.

33. According to PriceWaterhouseCoopers, “Canadian Tax Guide for Property Casualty Insurance Enterprises,” for income tax purposes, policy acquisition expenses can be deducted in the year the expenses are incurred.

34. According to the “Insurance Companies Act,” in Canada, the chief operating officer of a company may not be permanently appointed to the position of Appointed Actuary of that company.

35. According to the Office of the Superintendent of Financial Institutions Canada, “2000 Instructions for the Actuary's Report on P&C Insurance Business,” the actuary can use his own wording for an unqualified opinion, as long as he covers all the items listed in the instructions.

36. According to the Canadian Institute of Actuaries, “Dynamic Capital Adequacy Testing,” financial condition of an entity at a date is defined as its prospective ability at that date to meet its future obligations.
37. (3 points)

Linden, Canadian Tort Law, describes the functions served by tort law.

a. (2 points)

Identify and describe four functions served by tort law.

b. (1 point)

Describe how strict liability fulfills each of the functions identified in part a. above.

38. (2 points)

According to Linden, Canadian Tort Law, liability insurance dulls the deterrent effect of tort liability on risky behaviour. Briefly describe four measures that insurance companies have taken to restore this deterrent effect.

39. (2 points)

According to Linden, Canadian Tort Law, tort law is one of three levels of compensation provided to injured Canadians.

a. (1 point)

Identify and describe the other two levels.

b. (1 point)

Does tort law provide reparation that is more complete than the reparation provided by the other two levels? Explain your answer.

40. (1 point)

According to Linden, Canadian Tort Law, in the case Just vs. British Columbia, Mr. Justice Cory distinguished between two types of government activity – “true policy decisions” and “implementation.” Which activity does he believe should be immune from tort liability and why?
41. (2 points)

Based on Klar et al., Remedies in Tort, identify and briefly describe four factors that should be considered when determining an award for the cost of future care.

42. (2 points)


a. (0.25 point)

Identify one type of organization that was added when the definition of public entity was expanded by the commission’s recommendation.

b. (1.5 points)

In arriving at this expanded definition, the commission noted significant similarities shared by these organizations with public entities. Briefly describe three of these similarities.

c. (0.25 point)

Identify one type of organization that is specifically excluded from the expanded definition of public entity in the commission’s recommendation.

43. (2 points)

According to Hensler et al., Trends in Tort Litigation, The Story Behind the Statistics, contingency fees are the most hotly debated item about tort litigation.

a. (1 point)

Describe two criticisms of the contingency fee system.

b. (1 point)

Describe two arguments in support of the contingency fee system.
44. (1.5 points)

According to Baer and Rendall, *Cases on the Canadian Law of Insurance*, Canadian insurance regulations were designed to guarantee the financial solvency of insurers.

a. (0.75 point)

Briefly describe the three conditions that led to the insurance industry being singled out for such unusual public control.

b. (0.75 point)

Briefly describe three examples of legislation that were passed and designed to guarantee the financial solvency of insurers.

45. (1.5 points)


a. (0.5 point)

State the purpose of this Act.

b. (0.5 point)

What were two arguments of the insurance company?

c. (0.5 point)

Explain how the Judicial Committee of the Privy Council ruled on each of the company’s arguments identified in part b. above.
Brown, *Canadian Insurance Contracts in a Nutshell*, discusses the concept of nondisclosure and misrepresentation as it relates to different classes of insurance.

a. (0.5 point)

For insurance classes not specifically designated, describe the most significant way in which legislation has modified nondisclosure and misrepresentation rules developed by the courts.

b. (0.5 point)

For fire insurance in all provinces except Quebec, explain the distinction between omissions and misrepresentations.

c. (0.5 point)

For automobile insurance in the province of Ontario, explain how misrepresentation or failure to disclose on the part of the customer affects a claim against the customer under the third-party liability section of the policy.

d. (0.5 point)

For property and liability insurance in the province of Quebec, discuss the different treatment of nondisclosure as it relates to the risk the insurance company must bear.

e. (0.5 point)

For marine insurance, discuss how the duty imposed on the customer is different from other classes of insurance.

47. (1.5 points)

Based on Brown, *Canadian Insurance Contracts in a Nutshell*, describe the three-step resolution process for disputing entitlements under the no-fault automobile insurance scheme in Ontario. Include, where applicable, any organizations, references, limitations, or obligations that guide the process.
48. (1.25 points)

According to Baer and Rendall, *Cases on the Canadian Law of Insurance*, *Fletcher v. Manitoba Public Insurance Corporation (M.P.I.C.*)*, M.P.I.C had a duty to advise its customers of the existence, nature, and extent of underinsured motorist coverage. It was concluded that M.P.I.C. owed a duty of care to its customers if certain criteria were met.

a. (0.75 point)

Identify three of these criteria.

b. (0.5 point)

It was also found that M.P.I.C.'s duty is less onerous than that of the private agent or broker. Provide two such reasons.

49. (1 point)


a. (0.5 point)

What was American Home’s position with regards to the allocation of defense costs?

b. (0.5 point)

What did the court decide the basis should be for the allocation of the costs?

CONTINUED ON NEXT PAGE
50. (2.5 points)

According to Zurich Insurance Company vs. Ontario Human Rights Code, Section 21 allows discrimination if "reasonable and bona fide" grounds exist.

In a dissenting opinion, Justice L'Heureux-Dube stated that a two-pronged test for "reasonable and bona fide" grounds should be adopted.

a. (1 point)

Outline the components of this two-pronged test.

b. (1.5 points)

State whether or not Justice L'Heureux-Dube found that Zurich satisfied the components of the test and briefly describe the reasons for the findings.

51. (1 point)

Greene, "Government Insurers," makes several distinctions between insurance and social welfare. One of the major distinctions Greene makes regards eligibility for and funding of benefits.

a. (0.5 point)

Briefly describe the eligibility for and the funding of social welfare programs.

b. (0.5 point)

Briefly describe the eligibility for and the funding of insurance plans.

52. (1.5 points)

Hall, Mercer Handbook of Canadian Pension and Benefit Plans, describes several circumstances under which a person will not qualify for regular unemployment benefits for loss of work.

a. (1 point)

Identify four of these circumstances.

b. (0.5 point)

Identify two types of other income received that would generally reduce the unemployment benefits payable.

CONTINUED ON NEXT PAGE
53. (1 point)

According to Hall, Mercer Handbook of Canadian Pension and Benefit Plans, increased CPP/QPP contributions are required to sustain current benefit levels. Identify four reasons for the required increase.

54. (2 points)

Based on the Canadian Institute of Actuaries, Report of the Task Force on the Future of the Canada/Quebec Pension Plan, describe four advantages of the conditional (smart) funding of the CPP/QPP.

55. (1 point)

A young person with 5 children and a dependent spouse argues that OASDHI is unfair to him because of intergenerational transfer. Use the information from Hallman and Hamilton, Personal Insurance: Life, Health, and Retirement, to answer the following:

a. (0.5 point)

Describe one characteristic of OASDHI that counteracts this person’s argument.

b. (0.5 point)

Describe how intergenerational transfer is involved in the funding method of OASDHI.

56. (2 points)

According to Insurance Service Offices Inc., Superfund and the Insurance Issues Surrounding Abandoned Hazardous Waste Sites, once a National Priorities List (NPL) site is defined, litigation may commence with respect to a number of different issues. Describe three such issues and identify the parties involved for each issue.

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57. (2 points)

As the actuary for Shaky Ground Insurance Company, you are responsible for determining its loss reserves. Based on Office of Superintendent of Financial Institutions, “Earthquake Exposure Sound Practices Guideline” and the following information, determine the maximum change in the company’s earthquake premium reserve (EPR) for the year 2001. Show all work.

- Net PML$_{250}$ (2001): $4.000 million
- Net PML$_{500}$ (2001): $5.000 million

- Earthquake premiums earned in 2001: $1.350 million
- Cost of earthquake reinsurance for 2001: $0.550 million

- EPR (2000): $4.5 million

- The company did not have a material decrease in exposure in 2001.
- There were no earthquake losses in 2001.

58. (2 points)

According to *Analysis of Workers' Compensation Laws*, there are six basic objectives underlying workers’ compensation laws. Briefly describe four of these objectives.

59. (2 points)

According to Financial Services Commission of Ontario, *Section 410 Filing Guidelines*, no element of a risk classification system shall use membership in an organized group unless the group meets certain criteria.

a. (1 point)

Identify four of these criteria.

b. (1 point)

Under Ontario regulation 664, insurers are prohibited from using the existence of medical, surgical, dental, hospitalization, income continuation benefit or sick leave plans in their risk classification systems. Discuss the impact of this restriction from an actuarial perspective.

CONTINUED ON NEXT PAGE
60. (2.5 points)

According to KPMG et al., "Motor Vehicle Insurance in British Columbia at the Crossroads – Volume II: Options and Choices," the authors describe three different types of thresholds for automobile no-fault insurance plans.

a. (1.5 points)

Identify and describe these three types.

b. (0.5 point)

How do no-fault insurance plans typically treat an accident victim “above the threshold” compared to one “below the threshold”?

c. (0.5 point)

What has typically been the catalyst for change to a no-fault system?

61. (1.5 points)

According to Facility Association, “Plan of Operation,” four classes of business are defined for the purpose of determining participation in Association business.

a. (1 point)

Identify these four classes of business.

b. (0.5 point)

What is the main objective of the Facility Association?
62. (1.25 points)

Based on Ghezzi, "Actuarial Perspective on Property/Casualty Redlining Issues," answer the following.

a. (0.25 point)

Define the term "redlining".

b. (0.5 point)

Briefly describe the defense presented by insurers accused of redlining.

c. (0.5 point)

Briefly describe the Department of Housing and Urban Development's response to the defense mentioned in part b. above.

63. (2 points)

Limited Funds Mutual, an insurer in Jurisdiction X, is being wound up due to insolvency. Your company, Pay-for-All Mutual, will be assessed for losses under the terms of the "Compensation Plan for Property and Casualty Insurers." Based on this Plan and the following information, what will be the assessment borne by Pay-for-All? Show all work.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Assessment against all participating insurers</td>
<td>$8,000,000</td>
</tr>
<tr>
<td>Pay-for-All premiums in Jurisdiction X</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>Pay-for-All premiums in Total</td>
<td>$100,000,000</td>
</tr>
<tr>
<td>Total premiums in Jurisdiction X</td>
<td>$60,000,000</td>
</tr>
</tbody>
</table>
64. (3 points)

The Insurance Accounting and Systems Association, *Property-Casualty Insurance Accounting*, discusses the accounting treatment of the following items.

- Policy Acquisition Costs
- Unauthorized Reinsurance
- Federal Income Taxes

a. (1.5 points)

How is each of these handled under GAAP accounting?

b. (1.5 points)

How is each of these handled under SAP accounting?

65. (1 point)

Insurance Accounting and Systems Association, *Property-Casualty Insurance Accounting*, discusses the determination of a premium deficiency. When does GAAP require that a premium deficiency be recognized?

66. (2 points)

Given the following data taken from page 60.40 of the P&C-1, calculate the excess/deficiency ratio for the accident year 1999 as at the end of 2001. Show all work.

| 1999 accident year losses paid in 1999 | 6,509 |
| 1999 accident year Unpaid claims and adjustment expenses at the end of 1999 | 16,439 |
| 1999 accident year IBNR at the end of 1999 | 65,320 |
| 1999 accident year losses paid in 2000 | 10,345 |
| 1999 accident year Unpaid claims and adjustment expenses at the end of 2000 | 24,654 |
| 1999 accident year IBNR at the end of 2000 | 59,398 |
| 1999 accident year losses paid in 2001 | 12,465 |
| 1999 accident year Unpaid claims and adjustment expenses at the end of 2001 | 19,309 |
| 1999 accident year IBNR at the end of 2001 | 51,340 |

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67. (2 points)

Based on the following selected items from ABC Insurance, calculate the amount of reserves required on page 30.15 of the P&C 1. Assume all items not listed are zero. Show all work.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Assets</td>
<td>7,506</td>
</tr>
<tr>
<td>Receivables from Agents and Brokers</td>
<td>34</td>
</tr>
<tr>
<td>Other Assets</td>
<td>123</td>
</tr>
<tr>
<td>Computer hardware adjustment</td>
<td>65</td>
</tr>
<tr>
<td>Deferred Income Tax Assets</td>
<td>1</td>
</tr>
<tr>
<td>Investment Valuation Reserve</td>
<td>234</td>
</tr>
<tr>
<td>Earthquake Premium Reserve</td>
<td>36</td>
</tr>
<tr>
<td>Unearned Premiums</td>
<td>1,503</td>
</tr>
<tr>
<td>Unpaid Claims and Adjustments Expenses</td>
<td>4,536</td>
</tr>
</tbody>
</table>
68. (3 points)

According to Canadian Council of Insurance Regulators “Guideline - Minimum Capital Test (MCT) for Property & Casualty Insurers,” the determination of the Capital Required requires the sum of five components including margins for unearned premiums and unpaid claims.

a. (1 point)

Given the information below, calculate the margin for unearned premium. Show all work.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002 Gross Written Premium</td>
<td>100,000</td>
</tr>
<tr>
<td>2002 Net Written Premium</td>
<td>91,000</td>
</tr>
<tr>
<td>2002 Gross Earned Premium</td>
<td>95,000</td>
</tr>
<tr>
<td>2002 Net Earned Premium</td>
<td>87,000</td>
</tr>
<tr>
<td>December 31, 2002 Gross Unearned Premium</td>
<td>40,000</td>
</tr>
<tr>
<td>December 31, 2002 Net Unearned Premium</td>
<td>36,000</td>
</tr>
</tbody>
</table>

b. (1 point)

Given the information below, calculate the margin for unpaid claims. Show all work.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002 Gross Unpaid Claims – Commercial Property</td>
<td>5,000</td>
</tr>
<tr>
<td>2002 Net Unpaid Claims – Commercial Property</td>
<td>4,500</td>
</tr>
<tr>
<td>2002 Gross Unpaid Claims – Liability</td>
<td>178,000</td>
</tr>
<tr>
<td>2002 Net Unpaid Claims – Liability</td>
<td>112,000</td>
</tr>
<tr>
<td>2002 Gross Unpaid Claims – Surety</td>
<td>15,000</td>
</tr>
<tr>
<td>2002 Net Unpaid Claims – Surety</td>
<td>15,000</td>
</tr>
</tbody>
</table>

c. (1 point)

Apart from the margins for unearned premiums and unpaid claims, identify the other four components of the Capital Required for the MCT.
Based on Feldblum, "The Insurance Expense Exhibit and the Allocation of Investment Income," and using the information below, allocate the policyholders' surplus between the Fire and Allied Lines lines of business. Show all work.

The figures (all in $000) were taken from the 2000 and 2001 Annual Statements for the Simple Insurance Company (SIC). SIC writes only these two lines of business.

<table>
<thead>
<tr>
<th>1. Fire</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Premium</td>
<td>550</td>
<td>650</td>
</tr>
<tr>
<td>Earned Premium</td>
<td>500</td>
<td>600</td>
</tr>
<tr>
<td>Unpaid Loss</td>
<td>800</td>
<td>900</td>
</tr>
<tr>
<td>Unpaid LAE</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td>Unearned Premium Reserves</td>
<td>200</td>
<td>225</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2.1 Allied Lines</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Premium</td>
<td>275</td>
<td>325</td>
</tr>
<tr>
<td>Earned Premium</td>
<td>250</td>
<td>300</td>
</tr>
<tr>
<td>Unpaid Loss</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Unpaid LAE</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Unearned Premium Reserves</td>
<td>100</td>
<td>125</td>
</tr>
</tbody>
</table>

Policyholder's Surplus

CONTINUED ON NEXT PAGE
70. (2 points)

According to Office of Superintendent of Financial Institutions (OSFI), “Guideline on Accounting for Reinsurance of Short Term Reinsurance Contracts by Property and Casualty Insurance Enterprises,” OSFI supports the general principle of accounting that the offsetting of assets and liabilities in the balance sheet is improper.

a. (1 point)

What two criteria must be met for the exemption of this principle?

b. (1 point)

What are the implications for the balance sheet of the application of this principle, and its exceptions, to reinsurance transactions?

71. (2 points)

According to Insurance Bureau of Canada, “Accurate Financial Statements for P&C Insurers, The Role of Discounting Loss Reserves,” there are a number of objectives to be met when formulating a reform strategy for financial statements.

a. (1 point)

Identify the four key objectives of a reform strategy for financial statements.

b. (1 point)

For each objective, describe one reason why OSFI’s proposed mandatory discounting of loss reserves goes against that objective.

72. (2 points)

According to Office of Superintendent of Financial Institutions (OSFI), “Accounting for Property Casualty Actuarial Liabilities,” OSFI states that generally accepted accounting principles encompass present value determinations in some situations. Describe four examples in which the time value of money is considered within the current accounting framework.
73. (1 point)

Based on Canadian Insurance Accountants Association, “Fair Value of Claims Liabilities,” and the following information, calculate the interest rate risk. Show all work.

<table>
<thead>
<tr>
<th>Coverage</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Duration</td>
<td>5 years</td>
</tr>
<tr>
<td>Liability Duration</td>
<td>7 years</td>
</tr>
<tr>
<td>Current Discount Rate</td>
<td>6%</td>
</tr>
<tr>
<td>Anticipated Change in interest Rate</td>
<td>1%</td>
</tr>
</tbody>
</table>

74. (1 point)

Based upon the Canadian Insurance Accountants Association, “Fair Value of Claims Liabilities,” and the following information, calculate the provision for adverse deviation applied to the average yield, related to timing risk. Show all work.

<table>
<thead>
<tr>
<th>Average Yield</th>
<th>8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>4 years</td>
</tr>
<tr>
<td>Timing Risk</td>
<td>15%</td>
</tr>
</tbody>
</table>

75. (1 point)

Based on PricewaterhouseCoopers, “Canadian Tax Guide for Property Casualty Insurance Enterprises,” explain the difference between “income for tax purposes” and “taxable income.”

76. (1.5 points)

According to the Canadian Insurance Accountants Association, “The Insurance Companies Act Reports and Filings,” statutory provisions relating to filing and reporting are generally grouped into three categories.

a. (0.75 point)

Identify these three categories.

b. (0.75 point)

For each category described in part a. above, describe a provision that falls into the category.

CONTINUED ON NEXT PAGE
According to Office of the Superintendent of Financial Institutions Canada, "2000 Instructions for the Actuary’s Report on Property and Casualty Insurance Business," the actuary may consider the work of the appointed auditor with respect to the accuracy and completeness of data.

a. (0.5 point)

What is the main assumption made by the superintendent?

b. (0.5 point)

What additional work is required of the actuary of a foreign company?
78. (2 points)

*Best's Key Rating & Statistical Guide, Property–Casualty Canada* outlines two tests that are grouped into the "Market Profile" category.

a. (0.5 point)

Identify each of these two tests.

b. (0.5 point)

Describe what each of the tests identified in part a. above attempts to measure.

c. (1 point)

For one of the tests identified in part a. above, provide four questions to be asked when interpreting the results of the test.

79. (1.5 points)

Based on Canadian Institute of Actuaries, "Dynamic Capital Adequacy Testing," answer the following.

a. (0.75 point)

What is the purpose of Dynamic Capital Adequacy Testing?

b. (0.75 point)

What determines a satisfactory financial condition for an insurance company?

80. (2 points)

According to Canadian Institute of Actuaries, *Educational Note: Dynamic Capital Adequacy Testing - Life, Property and Casualty*, adverse scenarios can be formulated in various risk categories.

For each of the following risk categories, describe two possible adverse scenarios.

i) Pricing
ii) Inflation
iii) Expense
iv) Government and political action
81. (4.5 points)

You are given the following data for XYZ Insurance Company, a monoline insurer. XYZ has no investments in affiliated companies.

<table>
<thead>
<tr>
<th>Bond Size Adjustment Factor</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RBC Risk Components</strong></td>
<td><strong>Risk Charge</strong></td>
</tr>
<tr>
<td>Off-balance-sheet risks</td>
<td>$3,000</td>
</tr>
<tr>
<td>Reserving risk</td>
<td>$8,000</td>
</tr>
<tr>
<td>Premium risk</td>
<td>$12,000</td>
</tr>
<tr>
<td>R1</td>
<td>$11,000</td>
</tr>
<tr>
<td>R2</td>
<td>$26,250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Additional Information</strong></th>
<th><strong>Amount</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinsurance Recoverables</td>
<td>$15,000</td>
</tr>
<tr>
<td>Miscellaneous Recoverables</td>
<td>$10,000</td>
</tr>
<tr>
<td>Adjusted Policyholder Surplus</td>
<td>$20,000</td>
</tr>
</tbody>
</table>

Using Feldblum, "NAIC Property/Casualty Insurance Company Risk-Base Capital Requirements," and the above information, answer the following. Show all work.

a. (3 points)

Calculate XYZ's 2001 risk-based capital requirement. Show the calculation of each risk charge category, R0 through R5, separately.

b. (0.5 point)

Calculate XYZ's 2001 risk-based capital ratio.

c. (1 point)

If the authorized control level benchmark is set at 60% of the risk-based capital standards, comment on what level of action will be required given this result.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
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<tr>
<td>3</td>
<td>T</td>
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<td>4</td>
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<td>T</td>
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<tr>
<td>35</td>
<td>F</td>
</tr>
<tr>
<td>36</td>
<td>T</td>
</tr>
</tbody>
</table>
Question 37
A) 
1) Compensation – the strongest function; provided for injured person by at-fault tortfeasor

2) Deterrence – operates as the person who will pay damages will try to avoid the conduct that results in such damages and the judgment against at-fault party provide warning to others

3) Market Deterrence – creates a financial incentive to switch from dangerous to safer activities and to modify the way the activity is conducted

4) Education – provide individual responsibility, judicial decision and the dignity of individual

B) 
1) Compensation – made without regard to fault

2) Deterrence – those subject to strict liability must exercise super care

3) Market Deterrence – the enterprise must pay damages even if not negligent nor act intentionally

4) Education – society thought that certain activities need special treatment

Question 38
• Experience rated premiums

• Policy cancellation

• Driver cancellation

• Suggest or require safer practices

Question 39
A) 
• social insurance – first level of compensation such as medical benefits
  - coverage for all

• no fault schemes – coverage not based on fault, but may require belonging to specific group (i.e., workers covered by workers compensation)
B) Tort law will provide more reparation when injuries are severe and plaintiff is successful
or for individuals with, for example, earnings in excess of the maximum under no-fault
schemes.

Also provides for pain and suffering awards when tortfeasor’s actions are reprehensible.

It will not provide more when it is difficult to prove the required elements of tort.

Question 40
True policy decisions (economic, social, political, budgetary allotments to departments)
should be immune from tort liability because the government should be free to govern.
However, when the government is involved in maintenance, implementation, operating
activities, licensing, etc., it should be liable in tort if found negligent.

Question 41
1) Future care costs:
   a. Medical benefits, or
   b. Physical arrangements to make plaintiff’s life more comfortable
2) Duration of disability: life expectancy (if permanent) or disability period (if partial)
3) Discount rate: to offset inv. Income earned on a lump-sum award
4) Contingencies: factors that may raise or lower costs in the future; e.g. institutional care
will be cheaper than home care.

Question 42
A) A = benefits to members (Private)
   B = non-business purpose (Public)

   Public benefit non-profit organizations with activities similar to government services
were added to definition.

B) Similarities:
   1) Created for public good and necessity
   2) Damage awards reduce services, not profits
   3) Original immunity from tort also removed

C) Specifically excluded from Public Entity definition are Type A Companies, that provide
benefits to members only (Private)
**Question 43**

A)  
1) Fees are too high, usually 1/3 of the awards  
2) It encourages the bringing of frivolous claims

B)  
1) It allows people who cannot afford hourly fees to get represented.
2) It allows a proper remuneration to the lawyer to compensate for the causes he has lost (for which he receives no money).

**Question 44**

A)  
1) Loss of public confidence after many insolvencies  
2) Short-term price competition not seen in the public interest  
3) Fiduciary nature of insurance as money collected in advance

B)  
1) Legislate the creation of domestic insurers  
2) Legislate the licensing of foreign insurers  
3) Creation of rating bureaus

**Question 45**

A) Purpose of Act: it requires that statutory provisions should be added to all fire policies for risks located in Ontario.

B) Two arguments of the company:  
1) Infringe federal power of trade and commerce  
2) Infringe rights of a federally incorporated company

C) JCPC ruled:  
1) Within provincial powers as act pertains to civil and property rights and not trade and commerce.  
2) Does not infringe rights of corporations as it treats all incorporated companies equally.
**Question 46**

A) Misrepresentation must be material

B) Omission must be fraudulent, whereas for misrepresentation this is irrelevant

C) Insure still has to pay up to $2 M

D) Coverage is provided in proportion that premium actually charged bears to premium that should have been charged.

E) Insured might be bound to warrant the accuracy of facts not relevant to risk.

Also should make disclosure about expectations in good faith.

**Question 47**

1) Mediation: This is mandatory for all disputes for no-fault automobile. If this fails, the insured may elect Arbitrage or tort suit.

2) Arbitrage: But it will be under the Insurance Act instead of the Arbitrage Act.

3) Tort: Tort system.

**Question 48**

A) _

1) There was reliance by the insured: yes

2) Reliance was reasonable: yes

3) Reliance was expected: yes

B) _

1) MPIC employees have to provide information on available coverages but they do no have to provide specialized and individualized advices (contrary to private agents or brokers).

2) They are mere salespeople, they are not specialists.

**Question 49**

A) Defense costs should be split in proportion to coverage limits

B) 50% / 50% - primary / excess insurer
**Question 50**

A) 

1) Subjective component: the classification should accurately reflect cost differences and not ulterior reasons (good faith)

2) Objective component:
   a) The distinction must be reasonably necessary to assure a proper allocation of risks
   b) The classification should reflect causal connection and not just statistical correlation or reliance on traditional insurance practices

B) 

1) Zurich satisfies the subjective component of the test because it uses good faith in the classification system

2) Zurich does not satisfy the objective component because it only shows a statistical correlation and not a causal connection.

**Question 51**

A) Social welfare:

1) “Needs test” to determine eligibility

2) Funded by general tax revenues

B) Insurance plans

1) No “needs test” to determine eligibility, rather, payment to all insureds who suffer insured loss

2) Funded by specific contributions (e.g. employees, employers, government)

**Question 52**

A) 

1) Stop work without good justifications

2) Fail to take the course designated by the program without good justification

3) Person fired for misconduct

4) No work because of a strike/lockout from which the person is a member of the union who strikes/locks out

B) 

1) Severance pay
2) Holiday pay

**Question 53**
1) Maturation of the plans

2) Aging of the population (demographic shift)

3) Higher than expected disability costs

4) Lower than expected economic growth

**Question 54**
1) Contribution rates relatively insensitive to the prevailing real interest rates

2) Helps stabilize real interest rates
   As interest rates increase, contribution rates increase, increases domestic savings and relieves pressure on interest rates.

3) Setting 30-year level contribution rate promotes intergenerational equity

4) Prevents undesirable extremes of having small fund when interest rates high and large fund when interest rates low

**Question 55**
A) OASDHI provides benefits to both the dependent spouse and all 5 children, but does not require a specific contribution for these 6 dependents. Therefore he is contributing less and receiving more in benefits than the average contributor of any generation.

B) Current workers contribute a percentage of their wages to provide benefits for current retirees or others receiving benefits. Therefore, it is a pay-as-you-go system, where each generation pays for the older generation’s costs/benefits.

**Question 56**
3 issues this will involve
- 1st PRP
- any other PRPs
- Insurer of the 1st PRP if applicable
- Insurer of the other PRP if applicable

**Question 57**
EPR: this is a voluntary accumulation of earthquake premium that cannot be reduced unless there is a material decrease in exposure (or an earthquake loss).

- There are limits on the EPR:
• EPR ≤ net PML_{500} : EPR ≤ $5 M

• Maximum earthquake premium = (.75)[(current year EP) – (cost of earthquake reinsurance)]
  = (.75) [1.35 M - .55]
  = $0.6 M

• EPR_{2001} = EPR_{2000} + $0.6 M = $4.5 M + $0.6 M
  = $5.1 M but, is limited to $5 M

• Maximum change for year 2001 = $5 M - $4.5 M = +$0.5 M

**Question 58**

• Reduce the financial burden on public and private charities: as compensation is provided for injured workers, they do not need to turn charities to fulfill their needs.

• Promote cause of accident studies in view of helping reduce work-related accidents: because of no-fault factor, companies are willing to investigate and share with other companies their findings in order to reduce accident frequency.

• Prompt delivery of benefits (loss of income, medical, rehab): as it is a no-fault plan, benefits are delivered immediately. Don’t have to go through trial.

• Reduces costs as no need for expert witnesses, lawyers and other expenses related to trials.

**Question 59**

A) 1) Employee

2) Member of a union

3) Member of a professional association

4) Member of a not-for-profit organization in existence for at least 2 years, not formed solely for the purposes of purchasing products and services.

B) Persons with these types of plans would present less exposure under accident benefits as most (if not all) of these plans are first payer ahead of the auto policy. This results in a cross subsidy between risks with access to these plans and risks without.

**Question 60**

A) 1) Monetary threshold: if the injury exceeds a certain amount, it is possible to sue.
2) Descriptive threshold: it has to do with the physical characteristic of the injury. For example, if the injured loses his legs, then he can sue.

3) A combination of both

B) People above the threshold have the right to start an action against the person who committed the injury.

C) The increase cost of liability insurance because now same award for pain and suffering and the cost of trial has been increasing.

**Question 61**

A) 

\[ 1) \text{PPV non-fleet non pool risks} \\
2) \text{Risk sharing pool risks} \\
3) \text{Other than (1) and (2) [All other than PPV and RSP non-fleet, non pool risks]} \\
4) \text{Uninsured/underinsured automobile} \]

B) Provide automobile insurance to those risks that are unable, or which companies are unwilling (i.e., an alternative), to obtain coverage in the regular market at a reasonable price

**Question 62**

A) Insurers activities that limit affordability or availability of insurance in urban areas or to minority groups

B) Disparate treatment: they should be accountable only if they use an objectionable criteria

C) Disparate Impact: they should be liable for the outcomes no matter the practices used

**Question 63**

\[
\text{Assessment} = B \times \frac{C}{D} \\
= 8,000,000 \times \frac{10,000,000}{60,000,000} \\
= 1,333,333
\]

→ cap is equal to greater of 1,606,667 (proportionate share of 10,000,000) and 75,000 (.75% of premium in jurisdiction) both subject to 100,000 cap (1% of premium)

Therefore, assessment borne by Pay-for-All is 100,000.
**Question 64**

A) Under GAAP:
- Policy acquisition costs (PAC) are prorated over the life of the contract and an asset for deferred PAC is established, the remainder is a current expense against income
- Unauthorized reinsurance is treated the same as authorized, to the extent that it is deemed collectible
  - Otherwise a write-down may occur or an allowance for doubtful accounts
- Federal income taxes – all current, deferred, future taxes are taken into account
  - Current goes against income
  - Asset for future/deferred taxes or liability is established

B) Under SAP:
- PAC
  - All incurred expenses are deducted from income
  - No asset for deferred acquisition costs recognized
- Unauthorized reinsurance – unless there are letters of credit in deposits which are recognized, additional reserves will be set up
- Federal income taxes – only current taxes are recognized

**Question 65**
When expect future claims and adjustment expense, Deferred Policy Acquisition Cost, Servicing cost, Maintenance expense, Policy Holder Dividend, Taxes, License & Fees and all other associated costs are greater than Unearned Premiums and Investment Income.

**Question 66**

Unpaid @ Dec. 1999 = 16,439 + 65,320
= 81,759

Paid in 2000 and 2001 = 10,345 + 12,465
= 22,810

Unpaid @ Dec. 2001 = 19,309 + 51,340
= 70,649

Deficiency = 81,759 – 22,810 – 70,649
= -11,700

Deficiency ratio = -11,700 / 81,759
Question 67
Reserves required: Computer hardware adjustment, Deferred Income tax asset, Investment Valuation Reserve, Earthquake Premium Reserve, Other Assets.

= 65 + 1 + 234 + 36 + 123 = 459
(note that receivables are not included since not in arrear)

Question 68
A) Margin for UEP = 10% of the larger of {net UEP, 50% net WP}
= 10% larger [36,000, 0.5(91,000)]
= 0.10 (36,000, 45,500)
= 0.10 (45,500)
= $4,550

B) Margin for Unpaid Claim =
0.05 (4,500) Comm Property
+ 0.15 (112,000) Liability
+ 0.15 (15,000) Surety
= $19,275

C) 
1) Capital for On-Balance Sheet Asset
2) Capital for Off-Balance Sheet Exposures
3) Catastrophic reserves and Other Policy Provisions
4) Reserves for reins cede to unregistered insurers

Question 69

\[
PHS_{RAT} = \frac{\text{mean} PHS_{TOT}}{\left(\text{mean} LR_{TOT} + \text{mean} UEPR_{TOT} + \text{EP}_{TOT}\right)}
\]

\[
PHS_{LOB} = PHS_{RAT} \times \left(\text{mean} LR_{LOB} + \text{mean} UEPR_{LOB} + \text{EP}_{LOB}\right)
\]

\[
PHS_{RAT} = \frac{(250 + 350)/2}{\frac{[(800+900+400+500)/2 + (300+300+100+200)/2] + [(200+225)/2 + (100+125)/2] + [600+300]}{300}}
\]

= 0.1008
\[ PHS_{\text{FIRE}} = (0.1008) \times \left\{ \frac{800 + 900 + 400 + 500}{2} + \frac{200 + 225 + 600}{2} \right\} \\
= 213 \]

\[ PHS_{\text{ALLIED}} = (0.1008) \times \left\{ \frac{300 + 300 + 100 + 200}{2} + \frac{100 + 125 + 300}{2} \right\} \\
= 87 \]

**Question 70**

A) 
1) Legal right of offset
2) Intention to settle net or settle liability and asset simultaneously

B) Reinsurance transactions do not qualify for the exception → liabilities for losses and unearned premiums must be shown gross of reinsurance and an asset for reinsurance recoverables must be established.

**Question 71**

A) 
1) International Harmonization
2) Cost Compliance
3) Conceptual Issues
4) Accurate Statements

B) 
1) International Harmonization: in order not to isolate Canada from the rest of the world, we need to wait implementation of discounting until other major countries accept it and implement it.
2) Cost Compliance: it will require providing quarterly reports on less reserves to regulators. This is not too time consuming. Regulators need to give additional delays.
3) Conceptual Issues: Implementation of discounting needs to be done in the same time that accounting of assets will be modified to take that change into account.
4) Accurate Statements: Discounting needs to consider the impacts on the financial statements (assets, income, etc.).
**Question 72**

1) PV of Retirement Pension benefits
2) Loans which are leased
3) PV of post retirement benefits
4) Life insurance liabilities

**Question 73**

Interest-rate risk = $\% \text{ coverage } \left( \frac{\text{duration asst} - \text{duration liab}}{\text{duration liability}} \right) i$

\[
= 100\% \left( \frac{5 - 7}{7} \right) \times 1\% \\
= -0.2857\%
\]

**Question 74**

Timing risk = annual discount rate \times \text{duration}

\[= 15\%\]

Provision for adverse deviation = average yield \times \text{timing risk}

\[= 0.08 \times 0.15 \]

\[= 0.012\]

**Question 75**

“Income for tax purposes” is income that is considered when determining income taxes.

“Taxable income” is the income that is actually subject to tax after the appropriate adjustment and deductions are made to the “income for tax purposes”.

**Question 76**

A) 

1) Those relating to Corporate governance
2) Solvency or Financial Matter
3) Discretionary reports required by OFSI

B) 

1) File a copy of the report to OFSI the same that was filed with shareholder
2) Compliance with capital requirements (e.g. MAT)

3) OSFI needs more information to analyze

**Question 77**
A) That the actuary has reviewed the work of the auditor for reasonableness, but the actuary need not conduct a thorough review of the auditor’s work

B) The actuary may need to more thoroughly check the data supplied because the auditor’s report is generally not due until 105 days after year-end, but the actuary’s report is due after 60 days. Therefore, because the auditor’s work is subject to change, the actuary needs to review it more thoroughly and disclose that it has relied on such data.

**Question 78**
A)  
1) Surplus Relief
2) Receivables

B)  
1) Surplus Relief – Offers to measure companies dependence on reinsurers
2) Receivables – Tries to measure the amount due from agents/affiliates and if it might pose a problem.

C) Surplus Relief
   Is the company using internal/external reins?
   Is the ratio rising?
   Is it being dependent on unregistered reinsurance?
   What will impact be if reinsurance is withdrawn?

**Question 79**
A)  
- Discover threats to the satisfactory financial condition of the insurer
- Identify ways to lessen such threats
- Identify ways to mitigate materialized threats

B) Able to meet all future obligations under the base scenario and plausible adverse scenarios. Able to meet minimum capital requirements under the base scenario.
**Question 80**

i) 
1. Rate Freeze
2. Environment of increased competition

ii) 
1. Large sustained increase in general inflation
2. Large sustained increase in social inflation

iii) 
1. Technological obsolescence
2. Unexpectedly low premium volume

iv) 
1. Increase premium tax
2. Increase corporate tax

**Question 81**

A) 
- $3000 – only off balance sheet risks, but no investments in affiliates
- $11,000 – fixed income securities
- $26,250 – equity securities

R_3 = credit risk charge

\[ R_3 = 0.10 \times (15,000) = 1500 \]
\[ R_3 = 0.05 \times (10,000) = 500 \]
\[ = 2000 \]

R_4 = $8,000 – reserving risk charge
R_5 = $12,000 – premium risk charge

Note: If the credit risk charge is moved to the reserving risk charge before the square root.

Therefore,
\[ R_3 = \sqrt{1000} = 1000 \]
\[ R_4 = 8000 + 1000 = 9000 \]

RBC req = R_0 + \( R_1^2 + R_2^2 + R_3^2 + R_4^2 + R_5^2 \)
\[ = 3000 + (11,000^2 + 26,250^2 + 1,000^2 + 9,000^2 + 12,000^2) \]
\[ = 35,187.93 \]

B) Risk based capital ratio = \( \frac{20,000}{35,188} = 0.568 \) or 56.8%
C) Since 56.8% is lower than 60% ACL, the regulator is authorized to take control of the company, but this authority is discretionary at this level, not mandatory.