INSTRUCTIONS TO CANDIDATES

1. This 100 point examination consists of 71 questions divided into two sections. Section I contains 28 multiple choice questions worth 1 point each. Section II contains 43 problem and essay questions worth a total of 72 points.

2. To answer the multiple choice questions, use the short-answer card provided and a number 2 or HB pencil only. 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 2004, and the exam number, 7-United States.

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 each of the multiple choice questions, select the one best answer and fill in the corresponding letter. One quarter of 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 multiple colors.

Write your Candidate ID number and the examination number, 7US, 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.

CONTINUE TO NEXT PAGE OF INSTRUCTIONS
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. 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 United States 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.)

CONTINUE TO NEXT PAGE OF INSTRUCTIONS
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.

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. This survey is also available on the CAS website in the “Exams” section. 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 23, 2004. Please do not enclose the survey in the Examination Envelope.
1. Which of the following elements must be established by a plaintiff in a negligence claim?

1. A legal duty owed to the plaintiff to use due care
2. A causal connection between the negligent act and the plaintiff's injury
3. Actual loss or damage to the plaintiff

A. 1 only
B. 3 only
C. 1 and 2 only
D. 2 and 3 only
E. 1, 2, and 3

2. Pat Actuary, FCAS, an independent consultant, provides the actuarial opinion for ABC Insurance Company. Before preparing this opinion, Pat asks a representative of ABC Insurance Company to sign a contract that contains the following language:

"ABC Insurance Company agrees to indemnify and hold Pat Actuary harmless for any liability that Pat Actuary may incur due to negligence, gross negligence, or willful or wanton misconduct on the part of Pat Actuary while performing this engagement."

Based on contract law, what, if anything, is wrong with this contract?

A. Actuaries are not allowed to ask for hold harmless agreements from insurance companies.
B. Pat Actuary may ask ABC Insurance Company to hold Pat harmless but cannot ask for indemnification.
C. Pat Actuary may not ask for protection against gross negligence.
D. Pat Actuary may not ask for protection against willful or wanton misconduct.
E. There is nothing wrong with this contract.
3. Which of the following situations is most likely to result in a finding of negligence against party “P” under the doctrine of *res ipsa loquitur*?

A. P’s car skids into Q’s while both are traveling on a highway.
B. A person is found dead next to railroad company P’s rail tracks.
C. An x-ray reveals a surgical instrument in P’s patient following surgery.
D. A city park’s lawn is damaged after P walks his dog there in violation of a local statute.
E. Customer Q becomes ill two hours after eating at P’s restaurant.

4. No-fault insurance is designed to reduce payment for which of the following?

A. Pain and Suffering
B. Punitive Damages
C. Future Earnings
D. Medical Bills
E. Guest Liability

5. Which of the following statements is consistent with the research on tort litigation trends done by the Institute for Civil Justice?

A. Over 70% of the expenditures for auto tort litigation goes towards plaintiff compensation.
B. Juries are likely to award more money in an automobile accident case than a product liability case for the same injury.
C. Automobile accident cases are an increasing fraction of tort filings.
D. There is an overall increased probability that plaintiffs will win their lawsuits.
E. There has been a decrease in median awards for product liability cases.
6. Which of the following activities are performed by the National Association of Insurance Commissioners to assist state insurance regulators?

1. Establishing rates for the National Flood Insurance Program.
2. Monitoring the quality of insurance company investments.
3. Developing proposed model legislation.

A. 2 only  
B. 3 only  
C. 1 and 2 only  
D. 1 and 3 only  
E. 2 and 3 only

7. In 1990, the NAIC's accreditation program was adopted. Which of the following are goals of the NAIC accreditation program?

1. Provide consistency of solvency regulation among the states.
2. Improve the standards of financial examinations conducted in all states.
3. Provide consistency in rate filing approaches among states.

A. 1 only  
B. 2 only  
C. 1 and 2 only  
D. 1 and 3 only  
E. 2 and 3 only
8. Under which of the following methods of rate regulation can a state require withdrawal of a commercial automobile rate?

   1. Use and File
   2. File and Use
   3. No File

   A. 1 only
   B. 3 only
   C. 1 and 2 only
   D. 2 and 3 only
   E. 1, 2, and 3

9. The combination of cartel ratemaking and state regulation of rating classes and territories is likely to result in which of the following?

   1. An inefficient distribution method
   2. Supply Shortages
   3. Capacity Shortages

   A. 2 only
   B. 3 only
   C. 1 and 2 only
   D. 1 and 3 only
   E. 1, 2, and 3
10. Which of the following was commonly considered a problem with rating bureaus prior to the passage of the McCarran-Ferguson Act?

   1. Insurers controlled the decisions made by the rating bureau staffs.
   2. Policy forms were not conducive to bureau rating because they were dissimilar.
   3. Agents were forced to use bureau rates.

   A. 1 only
   B. 2 only
   C. 3 only
   D. 1 and 3 only
   E. 2 and 3 only

11. Which of the following statements is true regarding surplus lines in the U.S.?

   A. Alien insurers maintain a larger percentage of the U.S. surplus lines market than foreign insurers.
   B. If an alien insurer is unable to differentiate surplus lines business from other business, that insurer would be required to maintain a larger amount of capitalization than what otherwise would be necessary.
   C. Foreign insurers are subject to financial regulation only in their state of domicile.
   D. Alien insurers who conduct business in the U.S. surplus lines market are protected by state guaranty funds.
   E. The federal government’s Office of Comptroller of the Currency reviews applications of alien insurers petitioning to conduct business in the U.S. surplus lines market.

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12. Which of the following statements accurately describe property-liability guaranty funds?

1. A company must be declared insolvent before the guaranty fund may have any involvement.
2. A majority of the states use a pre-fund assessment.
3. The law gives guaranty funds priority treatment in recovering their costs from the insolvent insurer.

A. 1 only
B. 3 only
C. 1 and 2 only
D. 2 and 3 only
E. 1, 2, and 3

13. Which of the following are true regarding Medigap policies?

1. Premiums for Medigap policies are subsidized by payroll taxes.
2. Medigap policies are sold by private insurers.
3. Medigap policies are regulated by federal law.

A. 1 only
B. 2 only
C. 1 and 3 only
D. 2 and 3 only
E. 1, 2 and 3
14. Which of the following best describes a characteristic of Automobile Assigned Risk Plans?

A. Profit (loss) is shared by all insurers based on voluntary auto insurance written premium in the state.
B. Profit (loss) is shared by all insurers based on voluntary auto insurance earned premium in the state.
C. Insurers can choose to cede profit (loss) to the plan and just service the policy.
D. Any profit (loss) on a policy is treated as though the customer had been a voluntarily accepted driver.
E. All plan profit (loss) stays within the plan.

15. Community rating plans structured around a voluntary insurance market historically have broken down due to:

A. inadequate pricing
B. too finely-refined classification systems
C. the migration of low-risk policyholders from the plan
D. increasing state regulation
E. high expense ratios

16. Several states have created workers compensation (WC) funds that compete with private insurers in the state. With regard to these state programs, which of the following is true?

A. Profits of private WC insurers in these states are comparable to private WC insurers' profits in other states.
B. These funds usually have stifled competition in the states where they operate.
C. These funds usually have higher operating costs than private WC insurers.
D. These funds’ rehabilitation programs are substandard compared to private WC insurers.
E. Most state funds have been eliminated in the last twenty years.
17. Which of the following are true with respect to the Annual Statement’s treatment of individual lines of business?

1. Most revenues and expenditures that cannot be directly associated with particular policies (e.g., investment income and general expenses) are shown in the Annual Statement by line of business.

2. The focus in the Annual Statement is on profitability by line of business.

3. The Insurance Expense Exhibit provides an allocation of all revenues and expenditures to line of business.

A. 1 only
B. 3 only
C. 1 and 2 only
D. 2 and 3 only
E. 1, 2, and 3

18. Which of the following are true with respect to the Insurance Expense Exhibit (IEE)?

1. The incurred losses in the IEE are shown on a calendar year basis.

2. The IEE treats investment income as a revenue item.

3. The IEE shows profit (loss) amounts on an after-tax basis.

A. 1 only
B. 3 only
C. 1 and 2 only
D. 2 and 3 only
E. 1, 2, and 3
19. Which of the following statements are true regarding the valuation of real estate in the Annual Statement?

1. Schedule A includes an inventory of real estate values carried as assets.
2. On the Asset page, income-producing real estate is reported at the lower of depreciated cost less related encumbrances or market value less related encumbrances.
3. Gain (loss) on real estate is determined by deducting the depreciated book value from its sale price.

A. 1 only
B. 2 only
C. 1 and 3 only
D. 2 and 3 only
E. 1, 2, and 3

20. Where does an insurer's Annual Statement provide the information on the value of insurer's subsidiaries?

A. Balance Sheet
B. Schedule D
C. Schedule DM
D. Schedule F
E. Schedule H

CONTINUED ON NEXT PAGE
21. Rank the following companies in order of increasing ratios of Adjusted Surplus to Authorized Control Level (ACL):

<table>
<thead>
<tr>
<th>Company ($)000</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>R1</td>
<td>150</td>
<td>250</td>
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<tr>
<td>R2</td>
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<tr>
<td>R3</td>
<td>750</td>
<td>500</td>
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<tr>
<td>R4</td>
<td>1000</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>R5</td>
<td>2500</td>
<td>1100</td>
<td></td>
</tr>
<tr>
<td>ACL</td>
<td></td>
<td>?</td>
<td>500</td>
</tr>
<tr>
<td>Adjusted Surplus</td>
<td>5000</td>
<td>2800</td>
<td>1500</td>
</tr>
</tbody>
</table>

A. X < Y < Z  
B. Y < X < Z  
C. Z < X < Y  
D. Z < Y < X  
E. Y < Z < X

22. Which of the following is true with respect to the valuation of stocks in the Annual Statement?

A. Stock of a subsidiary is valued using the value prescribed by the NAIC Securities Valuation Office.  
B. Ownership of 1% voting stock is sufficient evidence that the company is a subsidiary. 
C. Preferred stocks with a mandatory sinking fund are always valued at amortized cost. 
D. The total change in unrealized capital gain (loss) in stocks is reported in the Exhibit of Capital Gains (Losses). 
E. The unrealized capital gain (loss) in stocks is classified as an investment gain or loss.
23. An insurance company is building a new corporate headquarters. Given the following investments related to the new facility, calculate the impact on statutory surplus:

\[
\begin{array}{ll}
\text{Building} & 2,000 \\
\text{Land} & 500 \\
\text{Network and computer equipment} & 150 \\
\text{Desks and chairs} & 100 \\
\text{File cabinets} & 50 \\
\text{Total cost} & 2,800 \\
\end{array}
\]

A. 0  
B. -150  
C. -300  
D. -500  
E. -800

24. Which of the following are deducted from capital available for purposes of the Capital Available to Capital Required test for a Canadian Property and Casualty insurer?

1. Investments in Affiliates  
2. Goodwill and Other Intangible Assets  
3. Reinsurance Recoverable from Unregistered Reinsurers  

A. 1 only  
B. 3 only  
C. 1 and 2 only  
D. 2 and 3 only  
E. 1, 2, and 3
25. Company XYZ, domiciled in Canada, writes only homeowners insurance. Given the premium data below for the 12 months ending December 31, 2003, calculate the margin for unearned premiums for the purposes of the Minimum Capital Test as of December 31, 2003.

<table>
<thead>
<tr>
<th>Premium Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Written Premium</td>
<td>$45,000,000</td>
</tr>
<tr>
<td>Net Earned Premium</td>
<td>$50,000,000</td>
</tr>
<tr>
<td>Net Unearned Premium</td>
<td>$20,000,000</td>
</tr>
</tbody>
</table>

A. $1,000,000  
B. $1,125,000  
C. $1,600,000  
D. $1,800,000  
E. $2,000,000  

26. Which of the following items is on an SAP Statement of Income and Retained Earnings, but not on a GAAP Statement of Income and Retained Earnings?

A. Increase in non-admitted assets  
B. Premium deficiency reserves  
C. Amortization of deferred policy acquisition costs  
D. Deferred federal income taxes  
E. Dividends to shareholders  

27. Which of the following property/casualty coverages has been identified as a source of potentially significant exposure to terrorism losses?

1. Financial Guaranty  
2. Workers compensation  
3. Fidelity  

A. 2 only  
B. 3 only  
C. 1 and 2 only  
D. 1 and 3 only  
E. 1, 2, and 3
28. The Scope paragraph of the Statement of Actuarial Opinion should include all of the following issues except one. Which issue need not be included?

A. Anticipated net salvage and subrogation
B. Reunderwriting initiatives currently underway
C. Discounts to loss and loss adjustment expense reserves
D. Net reserves for asbestos and environmental liabilities
E. Extended loss and expense reserves
29. (1.5 points)

Given the information below, answer the following questions. Assume there is no netting of amounts.

Alice suffers $10,000 in damages and Bob suffers $20,000 in damages when their cars collide. Each sues the other. The court finds that Alice is 25% responsible for the accident and Bob is 75% responsible for the accident.

a. (0.5 point)

How much will each party have to pay to the other if a pure type comparative negligence rule is applied?

b. (0.5 point)

How much will each party have to pay to the other if a 50 percent type comparative negligence rule is applied?

c. (0.5 point)

How much will each party have to pay to the other if a contributory negligence rule is applied?

30. (1 point)

Contrast the impacts of the pure no-fault and the tort systems in the context of personal auto insurance with respect to:

a. (0.5 point)

Deterrence of risky behavior

b. (0.5 point)

Speed of claim settlement

31. (1 point)

Some contend that the insurance industry's limited exemption from federal antitrust law facilitates collusion among insurers to increase prices. Discuss two counter-arguments to their position.
32. (1 point)

Some argue that a take-all-comers regulation would be beneficial to the public. Discuss two counter-arguments to their position.

33. (1 point)

In the face of government-imposed cross subsidies within a line of insurance, an insurance company might consider exiting that particular line of business. Describe two reasons why an insurer might decide against exiting.

34. (2 points)

Redlining is an issue that has been reviewed both by the Department of Housing and Urban Development (HUD) and the National Association of Insurance Companies (NAIC).

a. (0.5 point)

What was HUD’s challenge to insurers about redlining?

b. (1 point)

Describe two reasons why an insurer might choose not to offer insurance to residents in an urban area.

c. (0.5 point)

What role should actuaries play in this issue?
35. (1.5 points)

A state insurance commissioner is asked to assist in drafting an excess profits law for two lines of business: personal automobile and products liability. The commissioner would like to develop an allowance for short-run fluctuations using a very simple standard that can be easily understood.

a. (0.5 point)

Provide an example of an allowance for short-run fluctuations.

b. (0.5 point)

Should the same standard be applied the same way to both lines of business? Explain.

c. (0.5 point)

For this short-run fluctuations standard to be considered appropriate, what two potential errors should be considered?

36. (1.5 points)

State insurance regulators have the responsibility to ensure that insurers have the resources to pay claims.

a. (1 point)

Identify four actions the regulator might require an insurer to take if the regulator determines that the insurer’s potential ability to pay claims is suspect.

b. (0.5 point)

Why does the regulator need to consider how, or if, these actions are communicated to the public?
37. (2 points)

The Insurance Regulatory Information System (IRIS) and the Risk-Based Capital (RBC) requirements are two tools used by state insurance departments to monitor the financial condition of insurers.

a. (1 point)

Briefly describe the response taken by the regulator in response to the IRIS tests.

b. (1 point)

Briefly describe the response taken by the regulator in response to the RBC calculation.

38. (1 point)

Discuss how prior approval regulation might impact the following:

a. (0.5 point)

Size of the residual market

b. (0.5 point)

Insurer profits over the long term

39. (1.5 points)

Beginning in the mid-1960s, a significant number of states replaced their prior approval laws with less restrictive rating laws.

Briefly discuss three factors that influenced this trend.
40. (1 point)

It has been argued that prior approval regulation protects consumers against inadvertently purchasing coverages from high-priced insurers.

a. (0.5 point)

Provide a counter-argument to this assertion.

b. (0.5 point)

Identify an alternative government action to address this issue.

41. (1.5 points)

a. (0.5 point)

Briefly discuss one reason regulatory laws historically supported the making of rates by bureau and rate service organizations.

b. (1 point)

Briefly discuss two reasons Insurance Services Office (ISO) changed its process from filing rates to filing loss costs.

42. (2.25 points)

The debate regarding federal versus state regulation of insurance has been ongoing for more than a century, with arguments heard both in courts and in legislatures.

a. (1 point)

*South-Eastern Underwriters* was a landmark court case that dealt with antitrust in insurance. Briefly discuss the primary ruling in this case and the impact it had on the insurance industry.

b. (1 point)

In 1945, Congress enacted the McCarran-Ferguson Act, which addresses federal versus state regulation of insurance. Briefly describe two provisions of the McCarran-Ferguson Act and two related impacts on the regulation of the insurance industry.

c. (0.25 point)

Briefly describe a potential benefit to an insurance company if the McCarran-Ferguson Act were to be repealed.
43. (1.5 points)

The Risk-Based Capital charge for investments in alien insurance subsidiaries is calculated as 50% of the reported value of the enterprise or of the securities that it has issued.

a. (0.5 point)

What is the rationale for using 50% of the reported value as opposed to 100% of the reported value?

b. (0.25 point)

What would the charge be if the insurance subsidiaries were domiciled in the United States?

c. (0.25 point)

Why is the charge different for U.S. and for alien subsidiaries?

d. (0.5 point)

Discuss an argument for and an argument against a formula that assesses a higher Risk-Based Capital charge to alien subsidiaries.

44. (1 point)

A consulting firm has developed a model for pricing countrywide terrorism coverage, based entirely on the collapse of the World Trade Center. Describe two concerns an insurance company should raise in evaluating this model.

45. (1 point)

Provide two brief arguments against the following statement:

“Due to the complexity of many computer models, insurance companies will manipulate the model’s results in a way that is unfair to their policyholders.”
EXAM 7 - UNITED STATES, SPRING 2004 - SECTION II

46. (1 point)

Provide one argument against each of the following reasons that have been used to justify government participation in insurance.

a. (0.25 point)
   To fill the insurance needs not met by private insurers

b. (0.25 point)
   To force people to buy the insurance

c. (0.25 point)
   To obtain greater efficiency

d. (0.25 point)
   To achieve collateral social purposes

47. (1.5 points)

Compare or contrast the administration of a reinsurance facility with a joint underwriting association with respect to the following:

a. (0.5 point)
   Placement of risks

b. (0.5 point)
   Sharing of profit (loss)

c. (0.5 point)
   Insured awareness of placement in the residual market

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48. (1.5 points)

There are a variety of methods that may be used to finance public or private pension plans.

a. (0.75 point)

Describe how the current-cost financing method is used to fund pension obligations and explain the impact to plan participants upon plan termination.

b. (0.75 point)

Describe how the full-reserve financing method is used to fund pension obligations and explain the impact to plan participants upon plan termination.

49. (1.5 points)

a. (0.5 point)

Explain the difference between the financing of social insurance and social welfare programs.

b. (1 point)

Identify two social insurance programs and describe how they are financed.

50. (1 point)

Describe the sources of funding for the following:

a. (0.5 point)

Medicare Part A, Hospital Insurance

b. (0.5 point)

Medicare Part B, Supplementary Medical Insurance
51. (1.5 points)

Government participation in providing insurance can be as a partner, a competitor, or an exclusive insurer.

a. (0.75 point)

Identify a program where the federal government acts as:

1. a partner
2. a competitor
3. an exclusive insurer

b. (0.75 point)

Describe how a state government may operate under a workers compensation program as:

1. a partner
2. a competitor
3. an exclusive insurer

52. (1.5 points)

An actuarial study has shown that expected claim costs in State X vary based on driver characteristics (e.g., age, driving record, etc.). However, the legislature of State X has passed a law prohibiting the use of driver characteristics in determining rates for personal automobile insurance.

Describe two different strategies an insurance company might implement, and explain how each strategy could allow the company to be both competitive and profitable.
53. (1 point)

Two methods to estimate required capital for insurance companies are statutory required capital and capital by probability of ruin.

Explain which method is more appropriate for ratemaking on a return on capital basis for the following two lines of business:

a. (0.5 point)
   Workers compensation

b. (0.5 point)
   Homeowners

54. (1.5 points)

The issue of uncollectible reinsurance is addressed in a number of places in the Annual Statement.

a. (0.5 point)
   Describe how Schedule F reflects uncollectible reinsurance.

b. (0.5 point)
   Describe how the Statement of Actuarial Opinion addresses uncollectible reinsurance.

c. (0.5 point)
   Describe how Note 17 to the Financial Statement addresses uncollectible reinsurance.
55. (2 points)

Due to potential abuses involving retroactive reinsurance agreements, special accounting treatment for these agreements is warranted. In 2003, a company entered into a retroactive reinsurance contract, ceding reserves of $50 million and paying consideration of $45 million.

a. (1 point)

How does the ceding entity reflect this contract in its Balance Sheet and Income Statement on December 31, 2003?

b. (1 point)

How does the assuming entity reflect this contract in its Balance Sheet and Income Statement on December 31, 2003?
56. (2.5 points)

The ABC Insurance Company never had any asbestos-related claims or exposures, but has some pollution exposure and two claims were filed. ABC has no reinsurance applicable to pollution exposures.

<table>
<thead>
<tr>
<th>Year</th>
<th>IBNR and Bulk reserves at year-end</th>
<th>Loss Adjustment Expense Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>$100,000</td>
<td>$0</td>
</tr>
<tr>
<td>1996</td>
<td>400,000</td>
<td>10,000</td>
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<td>1,250,000</td>
<td>100,000</td>
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<tr>
<td>2002</td>
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</tr>
<tr>
<td>2003</td>
<td>400,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

Reserves for all loss adjustment expenses are included in the IBNR and Bulk reserves.

Claim #1 (on a 1985 policy):

- Reported on March 1, 1994 and reserved for $1
- Case reserve increased to $100,000 on July 7, 1997
- Case reserve increased to $1,000,000 on May 1, 2000, in preparation for trial
- Case settled for $800,000 on September 1, 2000

Claim #2 (on a 1999 policy):

- Reported on May 7, 2000 and reserved for $500,000
- Case reserve increased to $700,000 on June 2, 2002

Given the above information on ABC's pollution losses, draft tables that display the information required for the Note on Asbestos/Environmental Reserves of the 2003 Annual Statement. Show all work.
57. (4 points)

Given the following information from the 2003 Annual Statements of two reinsurers, ABC and XYZ, answer the questions on the following page.

Assume the companies are similar in line of business and geographic mix.

<table>
<thead>
<tr>
<th></th>
<th>Reinsurer ABC ($000)</th>
<th>Reinsurer XYZ ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonds</td>
<td>15,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Common stock (non-affiliated)</td>
<td>0</td>
<td>5,000</td>
</tr>
<tr>
<td>Cash</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Total invested assets</strong></td>
<td><strong>20,000</strong></td>
<td><strong>30,000</strong></td>
</tr>
<tr>
<td>Agents balances or uncollected premiums</td>
<td>2,500</td>
<td>5,000</td>
</tr>
<tr>
<td>Funds held by or deposited with reinsured companies</td>
<td>10,000</td>
<td>0</td>
</tr>
<tr>
<td>Reinsurance recoverable on loss and LAE payments</td>
<td>5,000</td>
<td>2,500</td>
</tr>
<tr>
<td>EDP equipment</td>
<td>1,000</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td><strong>38,500</strong></td>
<td><strong>37,500</strong></td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss reserves</td>
<td>15,000</td>
<td>10,000</td>
</tr>
<tr>
<td>LAE reserves</td>
<td>5,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Contingent commissions</td>
<td>1,000</td>
<td>500</td>
</tr>
<tr>
<td>Unearned premium reserves</td>
<td>5,000</td>
<td>6,000</td>
</tr>
<tr>
<td>Provision for reinsurance</td>
<td>0</td>
<td>5,000</td>
</tr>
<tr>
<td>Ceded reinsurance balances payable</td>
<td>1,000</td>
<td>2,500</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td><strong>27,000</strong></td>
<td><strong>25,000</strong></td>
</tr>
<tr>
<td><strong>Policyholders surplus</strong></td>
<td><strong>11,500</strong></td>
<td><strong>12,500</strong></td>
</tr>
</tbody>
</table>

QUESTION 57 CONTINUED ON THE FOLLOWING PAGE.
57. (cont.)

a. (0.5 point)

For two of the asset classes shown, discuss one potential concern with the quality of each asset class.

b. (0.5 point)

For each asset class discussed in part a. above, where in the Annual Statement would detail be shown that would allow a regulator to learn more about asset quality?

c. (1 point)

Compare and contrast the two companies with respect to reserve leverage.

d. (1 point)

Compare and contrast the two companies with respect to reinsurance items.

e. (1 point)

Which company has the stronger balance sheet? Explain your answer.
58. (5.25 points)

Micro Insurance Company, a workers compensation insurer, received its first claim in late 2002 for a 2002 accident. It involved the death of an insured employee, with spousal benefits of $50,000 per year starting in 2003, payable for life. Micro developed a tabular indemnity claim value of $2 million on an undiscounted basis, and $0.75 million on a discounted basis. Micro booked no paid amounts and $2 million as the reserve in its 2002 Annual Statement.

Micro has experienced no additional claims and does not anticipate any because it ceased operations. In December, 2003, Micro was considering the following options:

1. booking $50,000 paid and an undiscounted reserve of $1.95 million
2. booking $50,000 paid, a discounted reserve of $0.725 million and disclosing the $1.225 million discount
3. extinguishing its liability by entering into a structured settlement, with final paid and incurred values of $0.775 million

Assume the following IRS discount factors for accident year 2002:

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>.82</td>
</tr>
<tr>
<td>2003</td>
<td>.80</td>
</tr>
</tbody>
</table>

a. (2.25 points)

For each option, 1., 2., and 3., calculate the effect on 2003 regular taxable income, showing the separate effects on statutory income and the reserve discounting adjustment. Show all work.

b. (1.5 point)

For each option, 1., 2., and 3., calculate the effect on 2003 regular taxable income by showing the deduction for incurred loss as calculated by the IRS. Show all work.

c. (1.5 points)

For option 2., explain how to reconcile your answers in parts a. and b. above. Show all work.
59. (1 point)
Many industry analysts have argued property/casualty industry reserves are more than $50 billion deficient (approximately 12.5% of total industry reserves). Assuming the deficiency is spread evenly as a percentage of statutory surplus and all companies adjusted their reserves to the perceived adequate level, how would this affect the regulation of insurance companies with respect to risk based capital standards?

60. (1 point)
  a. (0.5 point)
  Identify two different assets not admitted on the statutory balance sheet.
  b. (0.5 point)
  Other than the change in non-admitted assets, identify two other adjustments to surplus that do not affect statutory income.

61. (1.5 points)
  a. (1 point)
  Feldblum, “Direct Charges and Credits to Surplus,” argues for a profitability measure using a capital base other than GAAP equity or statutory surplus. Describe this measure, being sure to identify the three components of capital.
  b. (0.5 point)
  In what situation would Feldblum argue that this capital measure is inappropriate?
Primary Insurance Company is a monoline workers compensation writer that has maintained a stable mix of business and has never utilized reinsurance. The company has implemented an expert claim system over the last year, which affected all open claims.

Use the following information to answer the questions below.

<table>
<thead>
<tr>
<th>Average Case Outstanding per Open Claim</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>7,300</td>
<td>15,816</td>
<td>18,250</td>
<td>30,416</td>
<td>36,135</td>
</tr>
<tr>
<td>2000</td>
<td>7,592</td>
<td>16,449</td>
<td>18,980</td>
<td>37,960</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>7,896</td>
<td>17,107</td>
<td>24,674</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>8,211</td>
<td>23,129</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td>11,956</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average Paid per Reported Claim</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>608</td>
<td>1,217</td>
<td>1,582</td>
<td>1,825</td>
<td>1,947</td>
</tr>
<tr>
<td>2000</td>
<td>633</td>
<td>1,265</td>
<td>1,645</td>
<td>1,916</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>658</td>
<td>1,316</td>
<td>1,744</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>684</td>
<td>1,421</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td>753</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The row and column headings in the tables above follow the Schedule P format.

Industry average severity for workers compensation has been rising modestly over the time period shown.

Company management contends the following:

- Case reserves are stronger now.
- The payment pattern is unchanged.
- Ultimate Loss and Defense and Cost Containment for the latest two accident years is unchanged.

a. (0.75 point)

Explain how specific parts of Schedule P could be used to calculate the triangles shown above.

b. (1.75 points)

Does the data shown support management's contentions? Explain. Show all work.
63. (3.5 points)

Given the following information, answer the questions below related to Company P's 2003 Annual Statement. Show all work.

- Primary Company P is 100% reinsured by authorized reinsurer R.
- P has $8 million unearned premium ceded to R as of December 31, 2003.
- R provided a letter of credit of $20 million for the unpaid losses and unearned premium.
- The reinsuring contract does not specify the due date in relation to claim payment date.
- In 2003, P has the following claims and reinsurance payment schedule:

<table>
<thead>
<tr>
<th>Amount of Loss, in millions</th>
<th>Accident Date</th>
<th>Payment date by P to Claimant</th>
<th>Payment Date by R to P</th>
</tr>
</thead>
<tbody>
<tr>
<td>$12</td>
<td>January 4</td>
<td>February 5</td>
<td>denied by R</td>
</tr>
<tr>
<td>4</td>
<td>March 9</td>
<td>June 2</td>
<td>August 1</td>
</tr>
<tr>
<td>3</td>
<td>April 16</td>
<td>May 17</td>
<td>October 29</td>
</tr>
<tr>
<td>2.5</td>
<td>June 3</td>
<td>July 19</td>
<td>unpaid</td>
</tr>
<tr>
<td>4.5</td>
<td>August 22</td>
<td>November 4</td>
<td>unpaid</td>
</tr>
<tr>
<td>3.5</td>
<td>November 1</td>
<td>Unpaid</td>
<td></td>
</tr>
</tbody>
</table>

a. (1 point)

Calculate the overdue percentage that would appear on Schedule F-Part 4, Aging of Ceded Reinsurance, in P's 2003 Annual Statement.

b. (1 point)

Determine whether reinsurer R is a "slow-paying reinsurer."

c. (1.5 points)

Calculate P's reinsurance provision for reinsurer R.
64. (2 points)

Given the following information, calculate ABC Insurance Company’s statutory net income for 2003. Show all work.

<table>
<thead>
<tr>
<th>Description</th>
<th>2003 Annual Statement ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividends to policyholders</td>
<td>5,000</td>
</tr>
<tr>
<td>Dividends to stockholders</td>
<td>20,000</td>
</tr>
<tr>
<td>Federal income tax incurred</td>
<td>250</td>
</tr>
<tr>
<td>Net Earned Premium</td>
<td>100,000</td>
</tr>
<tr>
<td>Net Incurred Losses</td>
<td>75,000</td>
</tr>
<tr>
<td>Net Investment Income Earned</td>
<td>15,000</td>
</tr>
<tr>
<td>Net Loss Adjustment Expenses (LAE) Incurred</td>
<td>12,000</td>
</tr>
<tr>
<td>Net Paid Loss and LAE</td>
<td>65,000</td>
</tr>
<tr>
<td>Net Realized Capital Gains</td>
<td>2,000</td>
</tr>
<tr>
<td>Net Unrealized Capital Gains (Losses)</td>
<td>(4,000)</td>
</tr>
<tr>
<td>Net Written Premium</td>
<td>125,000</td>
</tr>
<tr>
<td>Other Underwriting Expenses Incurred</td>
<td>20,000</td>
</tr>
</tbody>
</table>
65. (2.5 points)

Given the following information for general liability for the ABC Insurance Company, answer the questions below. Show all work.

<table>
<thead>
<tr>
<th>General Liability Data</th>
<th>Year Ending December 31, 2002</th>
<th>Year Ending December 31, 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Agents Balances</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Unearned Premium Reserves</td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td>Loss and LAE Reserves</td>
<td>1,500</td>
<td>2,000</td>
</tr>
<tr>
<td>Written Premium</td>
<td>500</td>
<td>700</td>
</tr>
<tr>
<td>Commissions and Brokerage incurred</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Taxes, Licenses and Fees incurred</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>Other Acquisition Expenses incurred</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>General Expenses incurred</td>
<td>56</td>
<td>66</td>
</tr>
</tbody>
</table>

ABC's investment gain ratio is 8%.
Mean surplus allocated to general liability is $500,000.

a. (1.5 points)

What is the investment gain on funds attributable to insurance transactions?

b. (1 point)

What is the investment gain on funds attributable to capital and surplus?
66. (3.5 points)

XYZ Insurance Company writes only Private Passenger Auto (PPA) Liability. Given the following information for XYZ, answer the questions below. Show all work.

- The industry worst case scenario adverse development is 21.0% for PPA liability.
- The industry average adverse development is 6.5% for PPA liability.
- The industry interest discount factor is 0.942 for PPA liability.
- The following is XYZ’s most recent Schedule P for PPA liability.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior</td>
<td>600</td>
<td>545</td>
<td>524</td>
<td>520</td>
<td>521</td>
<td>516</td>
<td>516</td>
<td>517</td>
<td>520</td>
<td>520</td>
</tr>
<tr>
<td>1994</td>
<td>615</td>
<td>625</td>
<td>635</td>
<td>643</td>
<td>643</td>
<td>645</td>
<td>648</td>
<td>650</td>
<td>650</td>
<td>650</td>
</tr>
<tr>
<td>1995</td>
<td>645</td>
<td>655</td>
<td>675</td>
<td>675</td>
<td>678</td>
<td>680</td>
<td>682</td>
<td>684</td>
<td>686</td>
<td>688</td>
</tr>
<tr>
<td>1996</td>
<td>675</td>
<td>695</td>
<td>705</td>
<td>710</td>
<td>713</td>
<td>715</td>
<td>718</td>
<td>720</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>705</td>
<td>725</td>
<td>720</td>
<td>720</td>
<td>725</td>
<td>725</td>
<td>728</td>
<td>732</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>720</td>
<td>740</td>
<td>745</td>
<td>752</td>
<td>756</td>
<td>756</td>
<td>759</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>755</td>
<td>770</td>
<td>780</td>
<td>780</td>
<td>786</td>
<td>786</td>
<td>790</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>800</td>
<td>824</td>
<td>832</td>
<td>832</td>
<td>840</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>825</td>
<td>849</td>
<td>862</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td>840</td>
<td>868</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>855</td>
</tr>
</tbody>
</table>


a. (1 point)

Calculate the two-year reserve development total that would appear on this Schedule P.

b. (2.5 points)

Calculate the reserving risk charge percentage under the Risk Based Capital rules.
67. (1 point)

Provide two arguments against the following statement:

"The covariance adjustment in the RBC formula assumes perfect independence among the covariance terms. Since at least a partial correlation among the covariance terms exists, the resulting RBC charge must underestimate the capital requirements."

68. (1 point)

Given the following information, determine the premium deficiency reserve for the Canadian DEF Insurance Company. Show all work.

- Unearned premiums are $1,000,000.
- Expected loss costs on unearned exposures are $800,000.
- Expected policy maintenance costs of the unexpired policies are $100,000.
- Expected internal adjustment expenses associated with the expected loss are $250,000.
- Deferred policy acquisition costs are $50,000.
- No investment income is expected.

69. (1.5 points)

Company GHI's investments included the following assets:

<table>
<thead>
<tr>
<th></th>
<th>Year-end 2002 ($000)</th>
<th>Year-end 2003 ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds held to maturity</td>
<td>800</td>
<td>1,000</td>
</tr>
<tr>
<td>Bonds available for sale</td>
<td>2,000</td>
<td>2,100</td>
</tr>
<tr>
<td>Common stocks</td>
<td>300</td>
<td>330</td>
</tr>
</tbody>
</table>

Assume that no permanent impairment of assets took place during 2003. Assume a corporate tax rate of 35%. Calculate the unrealized capital gain net of deferred taxes on the GAAP statement, assuming no changes in investment portfolio. Show all work.
70. (1 point)

With respect to an actuarial work product, explain why "the relative rather than the absolute size of a judgment item determines whether it should be considered material in a given situation."

71. (1 point)

Assume that yields for tax-exempt bonds are 3% and yields for taxable bonds are 4% and 2.5%, before- and after-tax, respectively. Company X is in a regular tax situation and optimized its net income after federal income taxes in 2003. Underwriting income is expected to deteriorate significantly in 2004.

a. (0.5 point)

Identify the investment action Company X should take in order to maximize after-tax net income in 2004.

b. (0.5 point)

Explain why the investment strategy in part a. above will maximize after-tax net income in 2004.
1. E
2. Invalid
3. C
4. A
5. D
6. E
7. C
8. E
9. C
10. D
11. B
12. B
13. D
14. D
15. C
16. A
17. B
18. C
19. E
20. B
21. D
22. D
23. B
24. C
25. D
26. A
27. C
28. B
QUESTION # 29

(A.) Alice is 25% responsible, so pays 25% (20,000) = 5,000 to Bob.
Bob is 75% responsible, so pays 75% (10,000) = 7,500 to Alice.

(B.) Alice is the only person who can recover since she was less than half at fault.
Bob owes 75% (10,000) = 7,500 to Alice.

(C.) In contributory negligence, there is no recovery if you are at all at fault.
Therefore, neither pays anything to the other.

QUESTION # 30

(A.) Pure no-fault does not deter risky behavior. This system does not consider who is at fault. Regardless of who is at fault the injured party’s insurance pays for their damages.

The tort system puts the blame and responsibility to pay for damages where it belongs: on the at-fault party. Payment for damages is either received directly from the at-fault party or from his/her insurance. If future premium is based on past experience, one would expect the at-fault party’s premium to increase, which would be an incentive to avoid future risky behavior.

(B.) Pure no-fault results in speedy claim settlement. The time needed to file, investigate and argue suits is eliminated.

Whereas the tort system lengthens the claim settlement period, to include time to investigate, file and argue responsibility and payment.

QUESTION # 31

(A.) The market conditions of the P & C Insurance industry are inconsistent with collusion. Market conditions such as low barriers to entry, low concentration levels, & relatively constant costs tend to indicate competitive conditions.

(B.) The heterogeneity of prices in the P & C industry is inconsistent with price fixing. Lack of any truly consistent pricing among insurers would discount claims of price fixing.
QUESTION # 32

- Insurers would increase prices for all insureds (become more conservative in rating)
- Insurers would institute complicated risk classifications (using u/w guidelines) to make insurance very expensive for high-risk insureds.

QUESTION # 33

(1.) May be regulatory restraints such as forcing the insurer to leave all lines of business in the state.
(2.) Loss of economies of scope brought by selling multiple lines of business in the state.

QUESTION # 34

(A.) HUD argued that insurers can not use sex, age, race, family status for rating unless it was supported by a compelling and sound actuarial analysis.

(B.)
   i. Lack of understanding of urban risk factors
   ii. Inadequate rates.

(C.) Actuaries should ensure that everyone involved understands the economics of the risk selection, classification and pricing processes.

They should also work to develop better risk management tools.

QUESTION # 35

(A.) An allowance could be chosen by judgment, or by a statistical analysis of variance in return-on-equity (ROE). In New York, the reasonable ROE is 18% and the allowance for deviation is 3%.

(B.) No, because products liability is a long-tail line and is probably subject to greater variation over time. A greater allowance would be justified.

(C.) TYPE I and TYPE II

   (1.) Long-run profits are excessive, but short-run profits are determined to be reasonable.
   (2.) Short-run profits are determined to be excessive, but long-run profits are reasonable.
QUESTION # 36

(A.)
(1.) Raise more capital to increase policyholders surplus.
(2.) Cease writing certain lines of business.
(3.) Reduce dividends.
(4.) Improve reinsurance coverage.

(B.) If the public learns the company is in trouble they may take their business elsewhere, guaranteeing that the company will not survive.

QUESTION # 37

(A.) Failing ratios on the IRIS tests provides regulators an early warning of potential financial problems of an insurer. The regulators prioritize the NAIC zone exams for companies with more failing tests, and which tests fails indicates where further to investigate.

(B.) The ratio of the insurer’s Adjusted Surplus to the Authorized control level RBL determines the regulator’s response.

<table>
<thead>
<tr>
<th>Adjusted Surplus/ (All RBC)</th>
<th>Regulator Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>150% - 200%</td>
<td>- Company Action Level – company submits plans to increase capital &amp; ↓ risks to capital.</td>
</tr>
<tr>
<td>100% - 150%</td>
<td>- Company submits plan as above; regulation may take some corrective action.</td>
</tr>
<tr>
<td>70% - 100%</td>
<td>- Regulator is authorized to (may) take control.</td>
</tr>
<tr>
<td>≤ 70%</td>
<td>- Regulator is authorized to (must) take control.</td>
</tr>
</tbody>
</table>

QUESTION # 38

(A.) Could increase size of residual market; if ins companies not allowed to set appropriate rate, they will refuse to sell policies, forcing substandard customers into the residual market.

(B.) Insurer profits over long term not affected since ins companies won’t sell policies w/out a proper return.
QUESTION # 39

(i.) Regulators/states thought less regulation would help the affordability, availability, and particularly lower what were high rates.

(ii.) Regulators/states became more interested in solvency monitoring as solvency tools and effectiveness increased. Rate regulation was not seen as important in maintaining solvency.

(iii.) Judgments and such actions of congressional committees (particularly the O’Mahoney committee) called for/affirmed the practice of rate deviations; the importance of bureau roles subsequently diminished.

QUESTION # 40

(A.) A better means to protect consumers against high cost insurers would be better insurance consumer information. Prior approval restrictions are an inefficient means of obtaining this protection as it adds other costs to the insurance system.

(B.) Government could provide better consumer information on insurance pricing; through public service ads, websites, consumer bulletins, media releases, or could require the insurers to provide this information through a sort of truth-in-selling clause.

QUESTION # 41

(A.) To avoid price war and competition.

(B.) NAIC working group concluded the rating organization should be prohibited from preparing and distributing final rates. Insurers should be forced to develop their own expense and profit loading.

19 states brought suit against ISO and a group of insurers and re-insurers charging they violate state and federal anti-trust laws.
QUESTION # 42

(A.) The ruling was that the insurance business was interstate commerce and, as such, was not exempt from the federal anti-trust laws, such as: the Sherman Act, the Clayton Act, the Robinson-Patman Act, and the Federal Trade Commission Act, all of which prohibited collusion to monopolize market; unfair trade practices and actions like boycott, coercion, and tie-in sales.

The impact on the insurance industry was that:

1. Insurance became a subject of a federal regulation and
2. The rates could not be set by bureaus or other rating organizations because that would be anti-trust action of setting rates “in concert.”

(B.)

Provision 1: it is in public interest for the insurance business to be regulated by states;
Impact: states could continue to regulate and TAX (show me the money!) insurance business;

Provision 2: Sherman, Clayton, Robinson-Patman, FTC acts did not apply as long as states regulated the insurance business in order to maintain anti-trust spirit and competition among insurers.
Impact: The rates could be provided by bureaus, given that virtually all states adopted the prior approval laws to “regulate” those rates.

(C.) One benefit can be that national insurers or insurers with writings in more than 1 state will see more consistency in regulation as opposed to having to comply with each state’s specific laws and requirements.

This can bring some expenses down.
QUESTION # 43

(A.) Data indicates that for US insurers subject to RBC, the RBC charge has averaged about 50% of the carrying value.

(B.) The RBC charge for the subsidiary could be passed up to the parent.

(C.) The charge is different because companies outside U.S. have different annual filing requirements. It would be difficult to calculate their RBC charge.

(D.)

FOR
Assessing the financial status of an alien insurer is more difficult since they are not subject to the same regulatory requirements as US subsidiaries. This fact increases the risk of investing in Alien subsidiaries and therefore should require a higher RBC charge.

AGAINST
It may discourage investment in Alien subsidiaries which reduces the diversity of the portfolio. Reduced diversity produces increased risk of a large loss due to one event.

QUESTION # 44

(1.) The collapse of the WTC may not be indicative of all terror attacks. There may be many possible frequencies and/or severities for other types of attacks. This would mean that the model is not representative of terrorist risk in general.

(2.) WTC was located in NYC where costs are generally higher than country wide costs are. Also, concentrations of people were probably higher than average countrywide. This would mean that the model is really more representative of terror in a major metropolitan area than terror countrywide.

QUESTION # 45

(1.) If insurance companies manipulate model results in a way that increases rates for public, that specific company will lose better risks to competitors who did not manipulate results.

(2.) If insurance companies manipulate model results and overestimate losses, this puts downward pressure on company’s earnings and increases the need of reinsurance and the cost of such reinsurance.
QUESTION # 46

(A.) If insurers are not providing a certain coverage, there is probably a reason. If the insurance community feels a risk is uninsurable or is unwilling to meet certain demands, maybe the government should try to find out what their reasons are and see if there is a way to make the risk insurable instead of just taking over and losing money.

(B.) Forcing people to buy insurance is a separate issue. You can force them to buy something without having to make them buy it from the government.

(C.) Governments are not necessarily more efficient. It may seem that way since they can eliminate costs such as commissions, but there are many costs that aren’t being accounted for, so it is unclear if they really are being more efficient.

(D.) Collateral social purposes are more appropriate for a welfare program than insurance. If you want to offer young or bad drivers a subsidy, then give them one or set up a welfare plan for old people. It doesn’t require governments to provide insurance.

QUESTION # 47

(A.) Reinsurance Facility – When a risk applies to an insurer the insurer can choose to accept that risk or send it to the reinsurance facility, but still service the policy.
JUA – a risk applies to the JUA and is serviced by one of the servicing carriers.

(B.) Reinsurance Facility – The sharing of profit or loss is done on a formula basis. JUA – the sharing of profit or loss is done based on the voluntary market share of insurers.

(C.) Reinsurance Facility – Insureds are not aware that they are in the residual market, since the company they applied to services the policy whether or not it was sent to the reinsurance facility.
JUA – they are aware, since they apply for insurance in the JUA.
QUESTION #48

(A.) Under current cost financing, current workers make contributions to the pension plan which are paid out to current pension beneficiaries. There may be a small contingency fund for short term imbalances of contributions and payments, but reserves of any substantial size are not built up. Upon plan termination, workers who contributed to the plan can not receive future benefits because there is no source of revenue to fund benefits any longer.

(B.) Under full reserve financing, workers contribute to a plan which builds up reserves and earns interest to the point necessary to provide future pension benefits to that worker. Upon plan termination, the amount paid into the reserves and interest will be available to fund the pension benefits of the contributors.

QUESTION #49

(A.) Social insurance is financed through premium payments mainly. Social welfare is financed through general funds from government.

(B.) Social Security – financed through payroll taxes, interest earned on trust funds and taxes paid on monthly benefits.
Unemployment Insurance – funded through premium paid by employers.

QUESTION #50

(A.) Payroll taxes on employer, employee and self-employed

(B.) Major financing = premiums payment by insured
Other = government revenue
QUESTION # 51

(A.)

(1.) National Flood Insurance → write your own program.

(2.) OASDI competes with private insurance.

(3.) Unemployment insurance (with cooperation of states).

(B.)

(1.) State government enacts statutes and/or legislation mandating workers compensation insurance which private insurers then provide.

(2.) In some states there are competitive state funds competing with private insurers.

(3.) In some states there are exclusive state funds.

QUESTION # 52

A company could use restrictive underwriting criteria to write only the best (lowest-cost) risks. It could then offer these customers very low rates.

Alternatively, a company could target a very high-risk market segment, such as youthful males with accidents. While this would require much higher rates, the company could still be competitive with other companies seeking this business.

QUESTION # 53

(A.) Statutory required capital

- High statutory requirements (RBC) provide sufficient protection and leads to greater capital than for probability of ruin (little catastrophe exposure).

(B.) Probability of ruin – reserve margins are slight, risk based capital requirements are low, but catastrophe exposure is high.
(A.) Schedule F develops the provision for reinsurance as a prospective measure of uncollectible reinsurance. The provision is formula driven and may not be an accurate estimate of uncollectibility, as it tends to be biased upward. (conservative)

(B.) The Actuary completing the SAO should consult with management about expected collectibility problems, consult industry ratings, and review Schedule F. The SAO should give a prospective measure of uncollectible reinsurance in the actuary’s opinion and the extent the uncollectible amounts are accounted for in reserve estimates.

(C.) Example 1:

Note 17 is a retrospective measure of reinsurance collectibility and gives the amounts written off during the calendar year. The amounts should be broken down into their components, ie. Loss, LAE, UEPR…

Example 2: Does not address uncollectible reinsurance.

(Chairman’s Note: We gave credit to candidates who knew that the “old” Note 17 was renumbered in the 2004 AS.)
QUESTION # 55

**Balance Sheet:** The “Cash” asset decreased by $45 million.

**Sheet:** The Loss Reserve did not change.

A write-in contra-liability was established for $50 million. This is a contra-liability called “Retroactive Reinsurance Ceded or Assumed.” It decreased total liabilities by $50 million. The $5M of surplus gain is restricted as a special surplus write-in item. It is not part of unassigned funds.

**Income Statement:** The $5 million gain is a write-in for “Other Income.” It does not affect Underwriting Income.

**Balance Sheet:** The “Cash” asset increases by $45 million. Loss Reserves do not change. A write-in liability, “Retroactive Reinsurance Ceded or Assumed” is setup for $50 million. This increases total liabilities. Surplus decreases by $5 million.

**Income Statement:** The $5 million loss is a write-in for “Other Income.” It does not affect Underwriting Income.

QUESTION # 56

The note requires that total L + LAE reserves at the beginning and end of each year be displayed along with loss + LAE incurred, on a calendar year basis, and paid during the year. These are reported both gross and net for the most recent 5 calendar years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Reserve Beginning</th>
<th>Incurred During</th>
<th>Paid During</th>
<th>Reserve Ending</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1995</td>
<td>1</td>
<td>99,999</td>
<td>0</td>
<td>100,000</td>
</tr>
<tr>
<td>1996</td>
<td>100,000</td>
<td>310,000</td>
<td>10,000</td>
<td>400,000</td>
</tr>
<tr>
<td>1997</td>
<td>400,000</td>
<td>1,050,000</td>
<td>100,000</td>
<td>1,350,000</td>
</tr>
<tr>
<td>1998</td>
<td>1,350,000</td>
<td>350,000</td>
<td>300,000</td>
<td>1,400,000</td>
</tr>
<tr>
<td>1999</td>
<td>1,400,000</td>
<td>(150,000)</td>
<td>250,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>2000</td>
<td>1,000,000</td>
<td>1,160,000</td>
<td>860,000</td>
<td>1,300,000</td>
</tr>
<tr>
<td>2001</td>
<td>1,300,000</td>
<td>20,000</td>
<td>20,000</td>
<td>1,300,000</td>
</tr>
<tr>
<td>2002</td>
<td>1,300,000</td>
<td>(130,000)</td>
<td>20,000</td>
<td>1,150,000</td>
</tr>
<tr>
<td>2003</td>
<td>1,150,000</td>
<td>(30,000)</td>
<td>20,000</td>
<td>1,100,000</td>
</tr>
</tbody>
</table>

The Annual Statement Note will only show the years 1999 through 2003 (5 years).

In this problem we show only gross because there is no reinsurance.
QUESTION # 57

(A.) Bonds – Amortization could be above market value. Reinsurance recoverable on Paid – Reinsurer quality could be questionable, or could dispute.

(B.) Schedule D has extensive info on Bond Portfolio, by quality + duration. Schedule F parts 3 and 4 has breakdown of reinsurance, 
    Notes provide additional info on potential collection problems

(C.) ABC shows 15,000 Loss Reserves + 5000 LAE Reserves = 20,000. These Reserves are supported by 11,500 in surplus. ABC might be in need of increasing surplus to support any adverse development on the reported reserves.

   XYZ shows 10,000 Loss Reserves + 1000 LAE Reserves = 11,000. These reserves are supported by 12,500 of surplus. XYZ appears to be in a relatively better leverage position than does ABC with respect to reserves.

(D.) XYZ uses unauthorized (or slow) reinsurers, but the F penalty is still less than half of surplus. ABC’s are current (they have some, because of the $5 K recoverable).

   ABC has substantial funds on deposit with its insured, about equal to its surplus, and about half of its reserves
   - that could be a problem, especially if the funds aren’t held by the companies responsible for the reserves (if they do match, we have a stronger case to offset).

(E.) I would have to say that XYZ has the stronger balance sheet since it has more invested assets, it is leveraged better, and since its PHS is greater than that of ABC. The reinsurance security may not be as strong with XYZ, but the Schedule F Penalty should account for this.
(A.)

<table>
<thead>
<tr>
<th>Effect on Statutory Income</th>
<th>Effect on Reserve Disc. Adjustment</th>
<th>Effect on Regular Taxable Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1.) -0.05M + (2M- 1.95M) = 0</td>
<td>2002 Disc. (2M)(1-.82) =0.36M 2003 Disc. (1.95M)(1-.8) =0.39M Change = +0.03M</td>
<td>0 + 0.03M = + $30,000</td>
</tr>
<tr>
<td>(2.) -0.05M + (2M-0.725M) = +1.225M</td>
<td>2003 Disc. (1.95M)(1-.8)=.39M remove discount before determining IRS discount Charge = +0.03M</td>
<td>1.225M + 0.03M = + $1.255M</td>
</tr>
<tr>
<td>(3.) -0.775M + (2M-OM) = +1.225M</td>
<td>2003 Disc: 0 Charge + -0.36M</td>
<td>1.225M-0.36M =+$865,000</td>
</tr>
</tbody>
</table>

(B.)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 M * .82 - .05 - 1.95 * .8 = + .03 M</td>
<td>2 M * .82 - .05 - .725 = + .865</td>
<td>2 M * .82 - .775TT = + .865 M</td>
</tr>
</tbody>
</table>

(Chairman’s Note: We did not receive any answers on Part C that received full credit, so I decided to include the following sample answer for this part:

The answer for option 2 in b. is clearly the correct one. In 2002, Micro was allowed a deduction for incurred loss of 2.0*.82=1.64M. In 2003, they are stating that they only need a deduction for 0.775. The difference between these two numbers is 0.865; the additional income that they need to pay tax on. In a. stat income for 2003 would reflect the full change in discount of 1.225. Since the IRS made Micro pay tax on discount in 2002 of .36 (2*.18), this needs to be credited. 1.225 - .36 = 0.865.)
QUESTION # 59

All companies would appear weaker to regulators since surplus would decrease while the reserving risk charge would increase. However, the actual strength of the companies would not change. It would therefore make sense to lower the authorized control level from 50% of the risk-based capital charge.

QUESTION # 60

(A.)

(1.) Agent’s balances > 90 days overdue.

(2.) The chair I am currently sitting on.

(B.)

- Provision for reinsurance (schedule F penalty).
- Unrealized capital gains.

QUESTION # 61

(A.) Return on capital
Capital embedded in undiscounted loss reserves, gross unearned premium reserves and capital tied up in risk based capital requirement.

(B.) When economic theory of capital exceeded the capital based on statutory standards.
QUESTION # 62

(A.) Avg case o/s per open clm = Pt 2- Pt 3 – Pt 4
Pt 5 (o/s clms)

Avg paid per reptd clm = Pt 3/ PE 5 (clms reptd)

(B.) PMT patterns

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>2.00</td>
<td>1.30</td>
<td>1.15</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>2.00</td>
<td>1.30</td>
<td>1.165</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td>2.00</td>
<td>1.325</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td></td>
<td>2.08</td>
<td></td>
</tr>
</tbody>
</table>

The pmt pattern has changed for 2002-2003 for at least the latest 3 accident years shown. There is a consistent pattern for each year and then a small increase in the factor in the latest calendar year. This could be due to a change in claims department practices.

Case Reserves

Yes the data support management’s contention that case reserves are stronger. Each accident year’s average reserve for 2003 has increased quite significantly from other accident years as of the same valuation.

Ultimate Loss & DCC

It is possible that ultimate losses & DCC have remained unchanged. The claims dept could have made a conscious effort to close out small claims, making all the average higher but not increasing the amounts of the claims.
QUESTION # 63

(A.) Assume start at payment date of claim by P

Overdue 1-30 days
31-60 days Nov 4 4.5 M
60-90
>90-120
>120 July 19 2.5 M
total payments due = 12 + 2.5 + 4.5 = 19 M
total overdue = 2.5 + 12 = 14.5 M ⇒ 14.5/19
by 120 days = 76.3 %

(B.) payments over due 90 days = 2.5 M
total payments = 2.5 M + 4.5 M = 7 M
payments last 90 days = 3 M

% = \frac{2.5 M}{7 M + 3 M} = 25% > 20%
slow-paying

(C.) total recoverables = 12 M + 2.5 M + 4.5 M + 3.5 M + 8 M
= 30.5 M
security = -20 M
10.5 M

total overdue and in dispute = 12 M + 2.5 M = 14.5 M
payments
20% x max (10.5 M, 14.5 M) = 2.9 M

QUESTION # 64

(1.) Net earned premium 100,000
(2.) Net loss incurred -70,000
(3.) Net LAE incurred -12,000
(4.) Other U/W expense incurred -20,000
(5.) Net U/W income -7,000 = (1) – (2) – (3) – (4)
(6.) Net investment income earned 15,000
(7.) Net realized capital gain 2,000
(8.) Net investment income 17,000 = (6) + (7)
(9.) Net income before tax and PH dividend 10,000 = (8) + (5)
(10.) PH dividends 5,000
(11.) Net income before FIT 5,000 = (9) + (10)
(12.) FIT 250
(13.) Statutory net income after FIT 4,750 = (11) - (12)
QUESTION # 65

[All dollars in thousands]

IGR = .08
Mean surplus allocated to GL = 500

Note: Assume answers are being calc for the 2003 IEE

Mean agents bal$_{GL}$ = 55
Mean UPR$_{GL}$ = 125
Mean loss + LAE Res$_{GL}$ = 1,750

Expenses = comm. + taxes + other acq + ½ general for current year
= 60 + 25 + 22 + 33
= 140
expense = expenses curr. year = 140 = .2
ratio WP curr year = 700

(A.) Inv gain for GL attrib to ins Trans = IGR x \((Mean\ Loss + LAE\ Res_{GL} + Mean UPR_{GL} \times (1-exp ratio_{GL}) - Mean\ agt\ bal_{GL})\)
= .08 x (1750 + 125 x (1-.2) − 55)
= .08 x (1795)
= 143.6

Inv Gain for GL in total = IGR x \((Mean\ Loss + LAE\ Res_{GL} + Mean UPR_{GL} - Mean agt\ bal_{GL} + surplus\ allocated\ to\ GL)\)
= .08 x (1750 + 125 + 55 + 500)
= .08 x (2320)
= 185.6

(B.) Inv Gain for GL attrib to Surplus = 185.6 - 143.6 = 42.0
QUESTION # 66

(A.) Two Year Reserve Development

(B.) Company Avg Development = Sum of 2003
\[
\frac{\text{Sum of Diagonal}}{6909} = 1.05
\]
\[
\frac{6580}{\text{Sum of Diagonal}} = 1.05
\]

Company factor = \(\frac{1.05}{1.065} = .9859\)

Company adverse development = \(.21 \times .9859 = .207\)

RBC Factor = \(\left\{ \frac{.21 + .207}{2} + 1 \right\} \times .942 = 1.1384\)

Risk change % = 13.84

QUESTION # 67

The square root rule will overstate the required capital for a given EPD (expected policyholder deficit) if the risk elements have a normal or lognormal distribution.

The correlation is very weak & the main correlation between reserving risk and reinsurance collectibles is taken care of by moving \(\frac{1}{2}\) of the credit risk charge from R3 to R4.
QUESTION # 68

UEPR = 1M
ELR = 800,000
PMC = 100,000
Adj. Exp = 250,000
DPAC = 50,000

Premium Deficiency = [(UEPR + Inv Inc - (ELR + PMC + Adj Exp + DPAC )]

= [1000000 + 0 - (800000 + 100000 + 250000 + 50000)]
= - [1000000 - 1200000]
= 200000

Since DPAC = 50000
IF we eliminate this DPAC amount from the Premium Deficiency we get
Premium Deficiency Reserves of

200000 – 50000 = 150000

QUESTION # 69

The bonds held to maturity are carried at amortized value, the change in MV (market value) has no effect.

The bonds available for sale are carried at MV, so they have created an unrealized cg (capital gain) of $2,100,000 – 2,000,000 = $100,000

The common stocks are carried at MV, so their unrealized CG is $330,000 - 300,000 = $30,000

Total unrealized CG = $100,00 + 30,000 = $130,000
Deferred tax on this is (0.35) ($130,000) = $45,500

Unrealized CG net of deferred taxes = $130,000 – 45,500 = $84,500
QUESTION # 70

This statement means that because companies come in all sizes and write any number of lines of coverage, the absolute value of an item will have a greater effect on a small company, with small surplus say, than on a large company with surplus in multiples of the small company. A reduction in surplus or a provision for reinsurance will have greater impact on a small insurer than that same amount would be a much larger insurer, for the small insurer it’s material while for the larger it is not.

QUESTION # 71

Invest in a higher proportion of taxable bonds than in the prior year.

Underwriting losses will reduce regular taxable income + alternative minimum taxable income. Thus, fewer tax preference items are necessary to achieve the required relationship between RTI + AMTI such that the regular tax equals the alternative minimum tax + after tax net income is maximized.