
SOCIETY OF ACTUARIES
Group and Health – Company/Sponsor Perspective

Exam CSP-GH

MORNING SESSION

Date: Friday, May 1, 2009

Time: 8:30 a.m. – 11:45 a.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 120 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 60 points).
 - a) The morning session consists of 11 questions numbered 1 through 11.
 - b) The afternoon session consists of 11 questions numbered 12 through 22.The points for each question are indicated at the beginning of the question.
2. Failure to stop writing after time is called will result in the disqualification of your answers or further disciplinary action.
3. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions on the exam booklet.

Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.
2. Write on only one side of a sheet. Start each question on a fresh sheet. On each sheet, write the number of the question that you are answering. Do not answer more than one question on a single sheet.
3. The answer should be confined to the question as set.
4. When you are asked to calculate, show all your work including any applicable formulas.
5. When you finish, insert all your written-answer sheets into the Essay Answer Envelope. Be sure to hand in all your answer sheets since they cannot be accepted later. Seal the envelope and write your candidate number in the space provided on the outside of the envelope. Check the appropriate box to indicate morning or afternoon session for Exam CSP-GH.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

Tournez le cahier d'examen pour la version française.

****BEGINNING OF EXAMINATION****
MORNING SESSION

- 1.** (4 points) You are the Chief Actuary at Bear Brothers Life Corporation, a U.S. based insurance company. Bear Brothers Life is considering an acquisition in Canada. You have been asked by your CEO to analyze the Canadian market.
- (a) Describe Provincial regulation pertaining to Canadian life and health insurance companies.
 - (b) Outline the tax treatment of employee life and health benefits provided by a Canadian employer sponsored plan from an employee point-of-view.
- 2.** (4 points) ABC Individual Life company has decided to leverage their Individual Health expertise and get into the Group marketplace.
- (a) (3 points) Compare and contrast the characteristics of the individual and group health insurance markets.
 - (b) (1 point) Describe the product development approaches ABC may use.

3. (10 points) You are an actuary with ACQ company which is evaluating the purchase of TARGET, a small insurance company. You have obtained the actuarial appraisal prepared by the TARGET company.

<u>TARGET Actuarial Appraisal</u>	<u>Year</u>		
	<u>2009</u>	<u>2010</u>	<u>2011</u>
Members	10,000	20,000	30,000
Premium (\$1,200 per member per year)	\$12,000,000	\$24,000,000	\$36,000,000
Investment Income (5% of premium)	600,000	1,200,000	1,800,000
Claims (75% of premium)	9,000,000	18,000,000	27,000,000
Reserves (25% of claims)	2,250,000	4,500,000	6,750,000
Expenses (10% of premium)	1,200,000	2,400,000	3,600,000
Commissions (5% of premium)	600,000	1,200,000	1,800,000
Required Capital (5% of premium)	600,000	1,200,000	1,800,000

ACO Assumptions

Based on information obtained during due diligence, you have decided to adjust the seller's analysis for the following:

- A one-time acquisition expense of \$1,500,000 realized in year 2009.
- Expenses, as a percentage of premium, will be reduced by one percentage point per year beginning in year 2010 to reflect anticipated synergies and cost savings.
- ACQ has committed to a three percentage point improvement in year 2011 claims, as a percentage of premium in year 2011.

Additional Assumptions

- Risk Free Rate 5.0%
- Expected Market Rate of Return 10.0%
- Beta 2.75
- Tax Rate 38.0%

- (a) (1 point) List the key documents and information packets that are needed in the merger and acquisition process.
- (b) (3 points) Discuss valuation techniques used in analyzing a company that may be for sale.
- (c) (4 points) How much should ACQ pay for TARGET assuming a 3 year time horizon? Use the information from TARGET's actuarial appraisal and factor in ACQ's due diligence adjustments. Show your work.
- (d) (1 point) List the challenges in valuing a company in the insurance sector.
- (e) (1 point) Outline additional factors that you may need to consider, in addition to the actuarial appraisal, to help form your judgment on the purchase price.

4. (6 points) You are the consulting actuary for Spiller Insurance Company (SIC). SIC issued a stop-loss policy to Oglesby Manufacturing Group (OMG). You have been given the following information regarding stop-loss coverage that OMG purchased for 2008:

- Number of employees = 500
- Average family size = 2
- Expected 2008 claims: \$100 per employee per month (PEPM)
- Aggregate stop-loss attachment point = 110% of expected claims
- Individual stop-loss attachment point = \$100,000
- Actual 2008 claims = \$1,500,000
- One individual incurred claims of \$250,000 in 2008. No other individuals incurred claims greater than \$100,000

You have been asked by SIC to prepare a presentation on the reinsurance options available to SIC. You have also been asked to review their calculation of reimbursement to OMG.

- (a) Briefly describe the financial and non-financial uses of reinsurance.
- (b) Discuss the types of proportional and non-proportional reinsurance.
- (c) Describe how a reinsurance program for a self-funded health plan would typically be set up.
- (d) Calculate the amount SIC will need to reimburse to OMG for 2008. Show your work.

5. (7 points) You are the Chief Risk Officer at Macy's Insurance Company.

- (a) (2 points) Describe the type of analytic tools that you would use to manage risk at the enterprise level.
- (b) (4 points) Describe the type of analytic tools that you would use to measure market risk, including advantages and disadvantages.
- (c) (1 point) Describe the type of analytic tools that you would use to estimate Operational Risk.

- 6.** (3 points) You are a consulting actuary advising a U.S. based company that is considering prefunding its retiree group health care coverage.
- (a) Discuss the advantages and disadvantages of prefunding a retiree health plan.
 - (b) List the funding vehicles that are available for retiree group life and health benefits in the United States.

- 7.** (6 points) You are an actuary auditing ABC Insurance Company and have been given the following information on a U.S. group life and health insurance contract:

Premium Mode	Semi-Annual
Case Anniversary	December 1, 2008
Statement Date	March 31, 2009
Unearned Premium	500
Acquisition Expense	20.0%
Maintenance Expense	13.0%
Loss Ratio	65.0%

- (a) Describe unearned premium and calculate the modal premium. Show your work.
- (b) Describe and calculate the following. Show your work.
 - (i) Deferred Policy Acquisition Cost (DPAC)
 - (ii) Recoverability Testing
 - (iii) Premium Deficiency Reserve and DPAC assuming a loss ratio of 70%.
 - (iv) Premium Deficiency Reserve and DPAC assuming a loss ratio of 90%.
- (c) Discuss the differences between an asset (reserve) adequacy analysis and a solvency test.

- 8.** (5 points) You are an analyst with an investment firm. You have been asked to review the Income Statements for the following two health plans.

	Hansbrough Health Plan	Lawson Health Plan
Premium Revenue	\$32,500,000	\$17,760,000
Other Revenue	3,000,000	500,000
Health Benefit Expenses	29,750,000	14,000,000
Administrative Expenses	1,950,000	600,000
Investment Income	900,000	177,600
Interest Expense	400,000	50,000
Income Tax	1,399,990	379,999

- Calculate Operating Profit, Pretax Income, and Net Income for each health plan. Show your work.
- Create a Same Size Income Statement including the values calculated in (a).
- Explain the advantages and disadvantages of the Same Size Income Statement.
- Calculate the level of assets for each health plan such that the ROA for each is 20%. Show your work.

- 9.** (7 points) You are a consultant for a company with 250 employees. They are considering an overhaul of their group health plan which might include moving from a fully-insured to self-funded arrangement. They would like you to prepare a presentation for them, including a review of their group policy and discussion of Form 5500 filings.

- Discuss the fiduciary duties ERISA would impose on the plan sponsor.
- Discuss policy provisions that would be contained in a group health contract.
- What must be included in the Form 5500 filing?
 - What plans are not required to file a Form 5500?

- 10.** (4 points) You are a consulting actuary hired by Cullen Corporation to attest to the actuarial equivalence of the company's retiree prescription drug plan in order to receive the drug subsidy from CMS. Describe the components that need to be documented in your actuarial report supporting the attestation.
- 11.** (4 points) You are a consulting actuary for Value Added Consulting. Your client is interested in implementing a Consumer Directed Health Plan (CDHP) along with a Health Reimbursement Account (HRA) or Health Savings Account (HSA).
- (a) Discuss the goal(s) and potential concerns surrounding CDHPs.
 - (b) Compare and contrast HRAs and HSAs.
 - (c) Discuss the concerns and tax-effectiveness of using an HSA to fund future health benefits, including retiree premium.

****END OF EXAMINATION****
MORNING SESSION