
SOCIETY OF ACTUARIES
Group and Health Core Exam - Canada

Exam GHCORC

MORNING SESSION

Date: Wednesday, October 28, 2015

Time: 8:30 a.m. – 11:45 a.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 100 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 40 points).
 - a) The morning session consists of 7 questions numbered 1 through 7.
 - b) The afternoon session consists of 7 questions numbered 8 through 14.

The points for each question are indicated at the beginning of the question. Questions 3, 4, 8, and 9 pertain to the Case Study.

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 because 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 GHCORC.
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.

CASE STUDY INSTRUCTIONS

The case study will be used as a basis for some examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular plan design to a company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.

****BEGINNING OF EXAMINATION****
Morning Session

- 1.** (6 points) You are the Appointed Actuary for a health insurance company. You are helping a newly qualified FSA to draft the annual disclosure required under IFRS 4.
- (a) (3 points) Describe the disclosure requirements pertaining to insurance risk.
 - (b) (3 points) The discount rate used to determine the insurance contract liability is 5.00%. However, you independently calculated a discount rate of 5.15%. After discussing this with your colleague, you discover that the two of you used different methods.
 - (i) Describe the two approaches to determining the discount rate and explain why they may not generate the same result in practice.
 - (ii) Last year, the insurance contract liability was valued using a discount rate of 4.00%. Explain the impact on the financial statements of the change in this assumption.

2. (6 points) Alberni Insurance Co. implemented the Extended Healthcare Policy Protection Plan (EP3) Standard effective January 1, 2013.

- (a) (1 point) Describe the key requirements of this agreement.
- (b) (1 point) Describe the advantages of this agreement for eligible plan sponsors.
- (c) (3 points) Fairfield Inc. is a plan sponsor with 145 eligible employees who have the following historical high claims experience:

Year	Paid claims
2013	Certificate #6674: \$75,000
2014	Certificate #6674: \$125,000 Certificate #8281: \$45,000
2015	Certificate #6674: \$18,000 Certificate #8281: \$75,000

The plan reimburses 100% of eligible drug costs and there is no employee premium cost.

Fairfield is considering the following three plan types:

- (i) Fully insured, non-refund
- (ii) Administrative Services Only
- (iii) Administrative Services Only with a \$35,000 stop loss pooling arrangement

Calculate the 2013, 2014 and 2015 claims amount that each applicable party is responsible for under each plan type. Show your work.

- (d) (1 point) Outline the considerations that Fairfield should address when choosing a plan type.

**Questions 3 and 4 pertain to the Case Study.
Each question should be answered independently.**

- 3.** (13 points) Another Day utilizes Skyfall Canada as its actuary for its post-retirement benefits plan. You are preparing for the upcoming December 31, 2015 accounting valuation under IAS 19. The last valuation was carried out as at December 31, 2012.
- (a) (1 point) The last membership data was provided in September 2012. The client has advised that due to recent HR system changes, it will be more challenging to gather data this year and he has requested that you continue to use data from the last valuation.
- Draft a response to the client.
- (b) (8 points) You and the client are reviewing the applicable assumptions.
- (i) (1 point) Define the key demographic assumptions that should be considered.
- (ii) (5 points) The client notes that the current trend rate assumption for extended health care is set at 8% for three years, then grading down by 0.5% per year to an ultimate rate of 5%. He has suggested using a flat trend rate such as 6% annually.
- (1) Critique the client's suggestion.
- (2) Propose a revised trend rate assumption for the new valuation, based on claims experience from 2012 to 2014. Show your work and justify your response.
- (iii) (2 points) The client inquires why the discount rate does not match the discount rate that the pension actuary is proposing.
- (1) Describe how the discount rate is determined.
- (2) Compare and contrast the expected percentage change in pension, extended healthcare, and life insurance liabilities resulting from a 1% increase in the discount rate.

3. Continued

- (c) (3 points) The client confirms that the plan design has not changed since the last valuation. Based on the updated assumptions and membership data, the overall liability has increased by 15%. The client is very cost-conscious and is looking for ways to redesign the plan to reduce its liability.
- (i) Calculate the retiree claims cost assumption for the 2016 calendar year using a three year average, based on the extended healthcare claims information provided. Assume a trend rate of 8% per year. Show your work.
 - (ii) Recommend a plan design to cap annual retiree claim costs at the current level. Justify your response.
 - (iii) Describe the impact on accounting disclosures of implementing this type of change.
- (d) (1 point) List the required statements of opinion that an actuary should provide in the valuation report.

**Questions 3 and 4 pertain to the Case Study.
Each question should be answered independently.**

- 4.** (12 points) You are the appointed actuary for Living Daylights Life and Health Insurance Company. Your team has just completed the 2014 year-end financial reporting and you are reviewing the results before they are presented to the CFO.
- (a) (5 points)
- (i) Construct the same size income statement for both years. Show your work.
 - (ii) Identify the drivers of the change in profit margin from 2013 to 2014.
 - (iii) Outline any additional adjustments that would make this analysis more robust.
- (b) (3 points) Your team has also prepared a sources of earnings (SOE) analysis. Since the CFO is not an actuary, you will need to be able to explain how this analysis complements the financial statements.
- (i) Describe when SOE analysis is used for group insurance.
 - (ii) Describe the general principle of SOE analysis, and outline the major steps in performing the analysis.
- (c) (4 points) The CFO has prepared the following budget for 2015:
- 10% total revenue growth from 2014
 - 8% profit margin
 - A new 10% dividend will be paid to shareholders
 - All other ratios are expected to be consistent with 2014
- (i) Calculate the projected sustainable growth rate for 2015. Show your work.
 - (ii) Critique the 2015 budget.

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5. (7 points) You are a consultant. One of your clients, Pender Partners, is implementing a new benefits plan. Pender is not federally regulated and its employees work exclusively in Ontario. The HR manager has put together a draft plan design that he wants you to review, as follows:

	Class 1	Class 2	Class 3
Eligibility	As determined by CEO	At least 10 years of service	Less than 10 years of service
Benefits offered	Basic life and AD&D Critical illness Disability Health and dental HSA*	Basic life and AD&D Disability Health and dental HSA*	Basic life and AD&D HSA*
Dependent coverage	Spouse Dependent children under age 21	Opposite-sex spouse only Dependent children under age 21	n/a
Employee contributions	100% of cost of disability benefits	10%/20% of cost of basic life and AD&D benefits for males/females, respectively 75% of cost of disability benefits	15%/30% of cost of basic life and AD&D benefits for males/females, respectively
Benefits during leave of absence	Benefits continued at same cost sharing	Benefits continued at same cost sharing**	Benefits continued at employee's cost**
Limitations	Bonus included in basic life and AD&D coverage	Bonus excluded from basic life and AD&D coverage No disability coverage if a result of drug/alcohol dependence	Bonus excluded from basic life and AD&D coverage
Termination age	Disability: age 70 All other benefits: retirement	All benefits: age 65	All benefits: age 55

* Credit formula based on age

** No benefits provided during maternity leave or LTD

5. Continued

- (a) *(1 point)* Outline the intent of the legislation governing discrimination issues for Ontario employers.
- (b) *(4 points)* Identify potential discrimination concerns with your client's desired plan design, and propose alternatives that are in line with legislation. Justify your response.
- (c) *(2 points)* Draft a statement to be included in the employee benefits handbook that outlines Pender's access to employees' personal enrollment and health information.

- 6.** (10 points) The Government of Canada has asked healthcare experts, including actuaries, to provide recommendations for a national pharmacare program. As a health actuary, you have decided to submit a proposal.
- (a) (1 point) Describe the sources of drug benefit coverage available to Canadians.
- (b) (3 points)
- (i) List the four major areas of concern that a national pharmacare program should resolve.
 - (ii) Compare and contrast current provincial pharmacare programs in Nova Scotia, Quebec, and British Columbia, based on plan design.
- (c) (6 points) Draft a detailed proposal to the federal government for a national pharmacare program including the following:
- (i) Outline some of the issues in designing a national pharmacare program, based on the lessons learned from public and private sector health plans.
 - (ii) Propose plan design characteristics and outline how they would address the issues identified above.
 - (iii) Describe the impact of your proposed program on employer-sponsored plans.
 - (iv) Recommend whether the government should implement a national pharmacare program. Justify your response.

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7. (6 points) Your firm provides Group Benefits consulting services to Humboldt & Co. They offer a full benefits package to their employees and all benefits are fully insured. They have recently expressed dissatisfaction with the service provided by the insurer so have asked for your thoughts on undergoing a vendor procurement exercise for their Group Benefits coverage.

(a) (2 points) Humboldt has noted that they have a member in Ontario who has been disabled since 2006 and has been in receipt of the following benefits while on disability:

- Basic Life and AD&D
- LTD
- Health and Dental

They would like to understand how changing vendors would impact his coverage.

Draft an email to Humboldt briefly describing which insurer (current versus go-forward) is responsible for providing each benefit to the disabled member, and which party is responsible for payment of premiums. State your assumptions.

(b) (2 points) Humboldt would like to ensure that there is no risk of lost coverage to its employees as part of any transition. They raise the example of an employee who dies at the time of the transition of insurers with a life insurance benefit of \$100,000, and neither the current nor go-forward insurer considers itself responsible for making the claim payment.

Assume both insurers would agree to take part in the arbitration process under CLHIA Guidelines to settle the dispute.

- (i) Describe the arbitration process.
- (ii) Describe the order and amounts of payments made between the current insurer, the go-forward insurer and the beneficiary assuming that:
- (1) The current carrier was found liable for claim payment.
 - (2) The go-forward carrier was found liable for claim payment.

7. Continued

(c) (2 points)

- (i) Humboldt is concerned about the accuracy of employees' dates of birth in their data files. Describe the potential consequences of misstatement of age on a group insurance application.
- (ii) Humboldt has also purchased individual coverage for certain employees. Describe the different renewal provisions under individual health policies.

****END OF EXAMINATION****
Morning Session

USE THIS PAGE FOR YOUR SCRATCH WORK