SOCIETY OF ACTUARIES

Group and Health Core Exam – U.S.

Exam GHCORU

AFTERNOON SESSION

Date: Wednesday, May 1, 2019
Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 6 questions numbered 9 through 14 for a total of 40 points. The points for each question are indicated at the beginning of the question. Question 10 pertains 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 GHCORU.

6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

Recognized by the Canadian Institute of Actuaries.

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****
Afternoon Session
Beginning with Question 9

9. (*6 points*)

(a) (*2 points*) Describe the advantages to both the employer and employee of each type of flexible spending account in Canada.

(b) (*1 point*) A US based employer wants to offer a health plan with a $200 deductible and a health care account that allows for employee contributions up to $2,500 annually.

(i) List types of health care accounts available in the US.

(ii) Recommend a health care account for the US employer described above. Justify your response.

(c) (*1 point*) Compare and contrast Canadian Health Spending Account plans and US Health Savings Account plans in terms of requirements and provisions.

(d) (*2 points*) You are given the following expenses for a sample employee, Pat:

	2016	**2017**
Medical claim deductible	$500	$550
Prescription drug copay	$150	$300
Dental insurance premium	$230	$240
Eyeglasses	$330	$450
Total	$1,210	$1,540

Assume:

- Pat has $1,500 annually to contribute to an account.
- Pat uses the account only for eligible expenses
- $1.00 US = $1.00 Canadian

(i) Calculate Pat's 2018 beginning balance under a Canadian Health Spending Account. Show your work.

(ii) Calculate Pat's 2018 beginning balance under a US Health Savings Account. Show your work.

Question 10 pertains to the case study.

10. (*6 points*) You are the chief actuary of Gotham Insurance ("Gotham"), a multi-line US insurer. Gotham is launching new voluntary group life and disability products to be sold to large non-employer groups. The finance team developed rates using the approach below, without help from you or any of Gotham's actuaries.

	Group Life	**Group Disability**
Benefit	Face value of 1 × salary per life	$2,000 monthly disability benefit per life regardless of salary level
Pricing approach	Composite (average) basis as if every insured life is 47	Composite (average) basis as if every insured life is 47
Expenses	50% of manual rate	40% of manual rate
Target market demographics	Moonraker Company Census provided by Human Capital	
Salary in Year 1	$40,000	
Annual salary increases	2%	
Morbidity and mortality	Thunderball's life claim rates	Thunderball's long term care claim costs for plan 2
Source for morbidity and mortality data	A current Gotham employee brought these data tables from their prior job at Thunderball.	

(a) (*3 points*) Calculate the expected total premium revenue over the next two years following the approach from the finance team for the following:

(i) (*2 points*) The new Group Life product

(ii) (*1 point*) The new Group Disability product

Show your work.

10. **Continued**

The CFO of Gotham has asked you to develop the actuarial memorandum to submit with the rates for regulatory approval using the pricing from the finance team without any adjustment.

(b) (*2 points*)

(i) Assess the pricing approach and data used by the finance team.

(ii) Recommend alternatives to the pricing approach and data used by the finance team. Justify your response.

(c) (*1 point*) Describe how your actuarial memorandum would need to address the use of the finance team's methodology, assumptions, and data, if you comply with the CFO's request.

11. (*8 points*)

(a) (*2 points*)

(i) List six solutions believed to provide coverage for Long Term Care ("LTC") in the US.

(ii) Describe whether the solutions in (i) provide coverage for LTC, and the conditions under which funding for each solution is provided.

Company XYZ issued a stand-alone LTC product in 2015. It is now 2018 and XYZ has revised assumptions, as shown below, justifying the product's first rate increase.

	2015 Assumption	**2018 Assumption**
PV of Past Claims as of 2018	\$80,000	\$120,000
PV of Future Claims as of 2018	\$10,000,000	\$18,000,000
PV of Past Premium as of 2018	\$800,000	\$800,000
PV of Future Premium as of 2018	\$16,000,000	\$16,000,000

PV = Present Value

Assume the product was issued in a state that still uses the 2000 Model Regulation.

(b) (*3 points*) Assess whether a 39% rate increase is justified under the LTC Model Regulation. Show your work and justify your response.

XYZ issued a similar product in 2013 and has had no rate increases to-date. Surprisingly, the experience is identical to the experience of the product in part (b). Assume there was an unexpected increase in utilization that affected a majority of the insurers that issued similar products, and that XYZ had lower lapses than those assumed in pricing.

(c) (*2 points*)

(i) Assess whether a 39% rate increase is justified under the LTC Model Regulation for the product issued in 2013. Show your work and justify your response.

(ii) Calculate the expected future loss ratio if the rate increase is approved. Show your work.

11. Continued

A new executive has joined XYZ and would like to offer a LTC product with a better risk profile than the current stand-alone LTC product.

(d) (*1 point*) Recommend a product. Justify your response.

12. (7 *points*) Holston is a US-based company with 48 full-time employees and is considering updating its health benefit plan.

Holston's Human Resources director has stated its health benefit plan is grandfathered because the only change since 2009 is an increase in deductible from $500 to $750 in 2012. She remembers receiving information of state approval for the plan's continuation.

(a) (*1 point*) Critique the Human Resources director's statement. Justify your response.

Holston is considering hiring four new full-time employees prior to implementing any health plan changes. Assume Holston is located in a state that continues to define small groups as 50 or fewer employees.

(b) (*2 points*) Explain how this hiring decision affects the following aspects of Holston's health coverage offering:

(i) Risk pool

(ii) Rating factors

(iii) The employer mandate

(iv) Any federal small business health care tax credits

(c) (*1 point*) Describe options for providing health care coverage to Holston's employees for each of the following scenarios:

(i) Holston maintains its current employee count of 48

(ii) Holston expands its employee count to 52

12. Continued

Another company, Stone LLC, purchases non-Affordable Care Act ("ACA") compliant coverage from Northern Insurance. Holston's CEO suggests to Stone LLC's CEO that he could save money by converting to an ACA-compliant option from Northern Insurance.

You are given the following:

Stone LLC Employee Demographics

Age	Gender	Tobacco User
21	Male	Yes
64	Female	No

Northern Insurance Rating Factors

Age	Non-ACA Age Factor	Non-ACA Female Gender Factor	ACA Age Factor	Non-ACA Tobacco Factor	ACA Tobacco Factor
0-24	0.50	2.0	0.61	2.0	Max allowable under ACA
25-29	0.61	2.0	0.61		
30-34	0.68	2.0	0.68		
35-39	0.72	1.5	0.72		
40-44	0.79	1.3	0.79		
45-49	0.95	1.0	0.95		
50-54	1.20	1.0	1.20		
55-59	1.49	1.0	1.49		
60+	2.07	0.9	max allowable under ACA		

Assume the male gender factor is 1.0 for all age brackets for Non-ACA rating. Assume there are no additional rating factors for both the ACA and non-ACA options.

Northern Insurance Monthly Manual Rates Per Employee

Manufacturing group experience	$250
Small group combined risk pool experience	$300

(d) (*1 point*) Explain required changes to Northern Insurance's rate factors and manual rates to become ACA-compliant.

(e) (*2 points*) Calculate whether or not Stone LLC should change to an ACA-compliant plan based on the monthly financial costs. Show your work and justify your response.

13. (*9 points*) RXHP is a health plan currently involved in the discussion of 2018 rebate contracting for the diabetes drug class with its pharmacy benefit manager ("PBM").

(a) (*1 point*) Identify key factors that determine a PBM's leverage in negotiating rebate contracts with pharmaceutical manufacturers.

RXHP currently covers three drugs in the diabetes class: Drug X, Drug Y, and Drug Z. The PBM has proposed two rebate scenarios for the diabetes class for 2018:

Scenario 1: Maintain the 2017 benefit tiers and rebates
Scenario 2: Move Drug X into a third tier

The following table summarizes the 2017 plan year experience for these three drugs as well as the benefit tier and rebate contract as a percentage of Average Wholesale Price ("AWP") for each scenario.

Drug	2017 Plan Year Experience		Scenario 1		Scenario 2	
	Utilization (Scripts)	Total AWP ($)	Tier	Rebate (% of AWP)	Tier	Rebate (% of AWP)
X	10,000	$750,000	2	33%	3	0%
Y	30,000	$600,000	1	0%	1	0%
Z	5,000	$750,000	2	15%	2	50%

Under scenario 2, assume 75% of Drug X current utilization will shift to Drug Z.

You are provided the following:

Drug Type	Annual Utilization Trend	Annual Unit Cost Trend	Discount (% of AWP)	Dispense Fee (Per Prescription)
Generic	3%	2%	75%	$1.50
Brand	-2%	10%	15%	$1.50

The members' cost share for the RXHP for 2017 and 2018 is provided below.

Tier	Member Cost Share*
1 (Generics)	$5
2 (Preferred Brand)	$30
3 (Non-Preferred Brand)	20% Coinsurance

* No deductible or out of pocket maximum applies to the member cost share.

13. Continued

(b) (*4 points*) Recommend the scenario with the best financial outcome for RXHP in 2018. Show your work. Justify your answer.

Independently, you are considering making changes to the plan for the 2019 plan year.

RXHP has received a rebate contract from the PBM for a new drug, Drug P, as presented below.

Drug	Tier	Utilization (Scripts)	Total AWP ($)	Rebate (% of AWP)
P	4	2,500	$1,500,000	25%

Drug Type	Discount (% of AWP)	Dispense Fee (Per Prescription)
Specialty	15%	$1.50

Tier	Member Cost Share
4 (Specialty)	10% Coinsurance

* No deductible or out of pocket maximum applies to the member cost share.

Given concerns about significant price increases that may result from coverage of Drug P, the PBM proposes a price protection arrangement. The terms would set the maximum AWP in 2019 of Drug P to $660 per prescription. Assume on July 1, 2019, the price of Drug P increases by 15%.

(c) (*3 points*)

(i) (*1 point*) Describe the concept of price protection as a negotiation strategy and how it might help reduce the impact of price increases.

(ii) (*2 points*) Calculate the impact of price protection on net plan liability for Drug P after July 1, 2019, on a per prescription basis. Show your work.

Under a Point-of-Sale ("POS") rebate arrangement, rebates are used to reduce the cost of a drug prior to member cost share, thereby lowering total member liability.

For plan year 2019, RXHP has decided to implement POS rebates. Assume no price increases on Drug P in 2019 or price protection arrangement.

(d) (*1 point*) Calculate the change in member liability for Drug P on a per prescription basis under the proposed POS rebate arrangement relative to the current rebate structure. Show your work.

14. (*4 points*) Squares Insurance Company ("Squares") currently offers one medical product and is adding two new medical products. The table below contains information provided by the product team to use for the rate development.

	Current Product	New Product 1	New Product 2
Funding approach	Fully Insured	Self-Funded	Fully-Insured
Group size	250-500 Employees	250-500 Employees	2-50 Employees
Provider network agreements	XYZ Network		
Benefit design	Affordable Care Act Silver-Level		
Projected annual revenue or premium equivalent	\$100 million	\$100 million	\$20 million
Target surplus as % of annual revenue or premium equivalent	12.5%	22.5%	5.5%
Expected rate of return (after-tax)	15%		
Corporate tax rate	25%		

(a) (*2 points*) Compare and contrast the risks for the two new products to the risks of the current product from the perspective of Squares.

(b) (*1 point*) Calculate the pre-tax profit margin percentage to include in the rate calculation for each of the three products using the table provided by the product team. Show your work.

(c) (*1 point*) Recommend changes to the target surplus assumptions provided by the product team. Justify your response.

****END OF EXAMINATION****
Afternoon Session

USE THIS PAGE FOR YOUR SCRATCH WORK

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