SOCIETY OF ACTUARIES
Group and Health Core Exam – U.S.

Exam GHCORU

AFTERNOON SESSION

Date: Wednesday, April 29, 2015
Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 7 questions numbered 12 through 18 for a total of 40 points. 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 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.

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****BEGINNING OF EXAMINATION****
Afternoon Session
Beginning with Question 12

12. (*4 points*) You run the Lombard Group, with the following employee profile:

Age	Gender	Number	Average Salary
30-40	M	70	$65,000
30-40	F	82	$67,000
40-50	M	35	$120,000
40-50	F	55	$118,000
50-60	M	6	$167,000
65-70	F	3	$170,000

You offer a group life benefit of 3× salary, with a reduction of 25% of the face amount for employees over 65. Over the past five years there have been claims amounting to $350,000. The demographic distribution of employees has been constant over these five years. There have been no improvements in mortality.

The manual gives the following expected monthly claims costs:

Monthly Claim Rates per $1,000 of Coverage					
Age	Male	Female	Age	Male	Female
15	0.10	0.05	55	0.40	0.20
25	0.12	0.06	65	0.80	0.40
35	0.16	0.08	75	1.00	0.50
45	0.20	0.10	85	1.20	0.60

Assumptions:

- Retention is 5% of premium.
- Credibility formula: square root (total monthly benefit exposure/$20,000,000), maximum of 100% credibility.

(a) (*2 points*) Calculate the manual claim rate per $1,000 of coverage. Show your work.

(b) (*1 point*) Calculate the experience rate per $1,000 of coverage. Show your work.

(c) (*1 point*) Calculate the credibility-weighted monthly premium. Show your work.

13. (*6 points*) You work at the Bay City Group consulting firm and a large ASO client is looking to change their rating tier structure. They provide you the following information:

Contract Type	Contracts	Members	Tier Factor
Single	1,000	1,000	1.000
Couple	500	1,000	2.100
Parent plus child(ren)	200	400	1.900
Family	300	1,000	3.125
Total	2,000	3,400	

The required revenue for next year is \$9,000,000.

(a) (*4 points*) Calculate the resulting annual rates for:

(i) A four-tier rating structure using the table above.

(ii) A two-tier rating structure where the second tier factor is 2.000.

(b) (*2 points*) Identify possible risks to the client associated with the change in tier structure.

14. (*12 points*) Bits n' Bytes, a web-based construction tool supplier, employs 600 people in a downtown Calgary, Alberta warehouse. The current group benefits plan is too expensive and does not meet the needs of the workforce.

The firm retains you, a group benefits consultant. After much exertion, the firm has landed on a redesign of their group benefits plan, and you have done a great job! You have managed to design a plan that:

- Reduces costs, and
- Better addresses the average employee's needs.

However, the HR representative has expressed concern as some employees will be worse off under the proposed plan design due to benefit rollbacks in some areas. You propose the idea of offering a modular flexible benefits plan, so these employees have the option of electing higher benefit coverage levels.

The CEO is supportive of the idea of flexible benefits, but has made it clear that:

1. Any pricing structure needs to be equitable for employees and create no losers (compared to the proposed plan design).
2. Considering the savings the proposed plan achieves, the CEO is prepared to spend up to an additional 10% over and above the proposed plan costs.

The CEO would like assistance in determining the appropriate strategy.

You are given the following information with respect to the current and proposed traditional benefit plans:

	Current Plan (Insured)		Proposed Plan (ASO)	
	Single	Family	Single	Family
Average Paid Claims	$2,500	$6,000	$2,000	$4,800
Distribution	25%	75%	25%	75%
Administrative Expenses	6.50% of paid premiums		6.00% of paid claims	

Additionally, you have the following information with respect to the agreed-upon flex options:

	Relative Value	Antiselection Factor	Expected Participation
Proposed Plan (Bronze)	100%	0.900	60%
Option 1 (Silver)	130%	1.100	30%
Option 2 (Gold)	160%	1.150	10%

Premium taxes in Alberta are 2.00% and the Goods and Services Tax (GST) is 5.00%.

14. Continued

(a) (*1 point*) Calculate the expected company savings achieved with the proposed plan design, assuming that premiums under the current plan exactly cover claims and applicable expenses and premium taxes.

(b) (*2 points*)

(i) (*1 point*) List and describe the four pricing objectives employers frequently want to achieve with their flexible benefit pricing structure.

(ii) (*1 point*) List and describe the various flexible benefit pricing structures available.

(c) (*1 point*) Describe drivers of adverse selection and potential mitigation strategies.

(d) (*8 points*)

(i) (*1 point*) Calculate single and family price tags for the Bronze, Silver and Gold options. Justify your decision and show your work.

(ii) (*5 points*) Calculate the total company costs under each pricing structure identified in part (b), and identify which pricing objectives are achieved. State any assumptions made and show your work.

(iii) (*2 points*) Draft an email to the CEO recommending whether Bits n' Bytes should adopt the flexible benefits plan. Justify your position.

15. (*6 points*) You are an actuary at THE Health Insurance Company who currently contracts with Bund PBM.

(a) (*1 point*) Describe Wholesale Acquisition Cost (WAC) and Average Wholesale Price (AWP) and explain how each is used to set drug prices.

(b) (*1 point*) Describe typical tasks that a PBM performs for an insurance company.

(c) (*2 points*) You are given the following:

- Group ABC has purchased a prescription drug insurance plan with an open Formulary with 20% coinsurance for all drugs
- Bund PBM offers a 14% discount off AWP and a $0.80 per script dispensing fee for all brand drugs to the plan
- For a particular brand prescription, a member of group ABC pays $80 to the pharmacy.

Calculate the WAC for this prescription. Show your work.

(d) (*2 points*) You are given the following claim experience for THE's entire book in 2013:

Drug Type	AWP per script	Number of scripts
Brand	$350	40,000
Generic	$100	90,000

With its current PBM, the insurer receives discounts of 14% off AWP for brand drugs and 75% off AWP for generics, and pays dispensing fees of $0.80 per script for both generic and brand drugs.

(i) Determine THE's total drug cost for pharmacy benefits in 2013. Show your work.

THE has received a proposal from a different PBM that guarantees discounts of 16% for brand and 76% for generic, and dispensing fees of $0.10 for brand and $2.50 for generic.

(ii) Determine whether the new proposal results in a lower expected drug cost than the current PBM arrangement, based on 2013 utilization data. Show your work.

16. (*5 points*)

(a) (*2 points*) You work in the trend analytics area of a large payer. You just finished the latest negotiations with New Nature General (NNG), a risk averse local hospital. NNG felt their overall revenue increase needed to be 5%. Medicare and Medicaid have announced their fee schedules remain unchanged, and thus the shortfall will need to be covered by the commercial payers. This resulted in an overall provider contracting increase of 7% for commercial payers.

(i) Describe components of medical trend which you can influence to offset the 7% provider contracting increase.

(ii) Describe other components that you cannot influence which could impact medical trend.

(b) (*3 points*) For future negotiations, one approach would be to control the magnitude of provider contracting increases by reimbursing the hospital according to the Medicare fee schedule.

(i) Explain issues with this approach.

(ii) Propose three alternate strategies assuming NNG would consider taking on additional risk. Justify your response.

17. (*3 points*) Giant Group is considering offering a Group Long Term Care Insurance (GLTCI) benefit package to its employees.

(a) (*1 point*) Describe the types of GLTCI plans that are available for purchase.

(b) (*1 point*) List ways to limit anti-selection in the enrollment for GLTCI plans.

(c) (*1 point*) Explain product features that Giant Group could use to provide its employees with inflation protection.

18. (*4 points*) You are the CEO of ABC Insurance Company. ABC is considering entering the critical illness market.

(a) (*1 point*) Outline the advantages and disadvantages of using internal vs. external sources of data for determining expenses for a given policy.

(b) (*2 points*) Your company's goal is to increase the small group block of business. You have agreed to the approach of realigning the commission structure to achieve this goal.

Explain the items that need to be considered.

(c) (*1 point*) Identify state and federal taxes and fees that should be accounted for when a policy is priced.

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

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