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

Exam GHCORU

AFTERNOON SESSION

Date: Wednesday, November 1, 2017
Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 7 questions numbered 9 through 15 for a total of 40 points. The points for each question are indicated at the beginning of the question. Questions 9 and 10 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 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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Printed in the U.S.A.
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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

Questions 9 and 10 pertain to the case study.
Each question should be answered independently.

9. (*7 points*) The table below compares the 2016 non-preferred dental experience of Your Eyes and Smiles to its benchmark:

	Experience (PMPM)	**Benchmark (PMPM)**
Class I	$9.00	$8.00
Class II	$5.00	$6.00
Class III	$14.00	$4.00

(a) (*2 points*) Describe the three classes listed in the table above and identify possible causes of the discrepancy between the experience and benchmark.

(b) (*2 points*) Recommend four benefit plan changes that could drive the experience of Your Eyes and Smiles closer to its benchmark. Justify your recommendations.

(c) (*3 points*) Compare and contrast the use of the following underwriting and rating parameters for dental versus medical group insurance:

- Group size
- Geographic area
- Age and gender
- Waiting periods
- Minimum level of participation requirement
- Credibility thresholds

Questions 9 and 10 pertain to the case study.
Each question should be answered independently.

10. (*6 points*) You are a prescription drug pricing analyst for Quantum Health Insurance Company, which is considering adding a new offering to its Small Group Exchange Plans: Quantum Health Super Rx.

The plan design for prescription drugs under Quantum Health Super Rx will be as follows:

Benefit Category	Quantum Health Super Rx Co-Payment
Prescription drugs (Generic / Preferred Brand / Non-Preferred Brand / Specialty)	In-Network: $10 / $50 / No coverage / $150 Out-of-Network: No coverage

There is no deductible, no coinsurance and no out-of-pocket maximum applied to prescription drugs.

You are given the following with respect to Quantum's current Small Group prescription drug experience and trend expectations:

	2014 Distribution of Claims	Annual Unit Cost Trend	Annual Utilization Trend
Generic	78.0%	1.00%	1.00%
Preferred Brand	12.1%	8.00%	1.25%
Non-Preferred Brand	8.9%	8.00%	1.25%
Specialty	1.0%	8.00%	5.00%

- The 2014 PBM terms are maintained in 2015.
- The Super Rx offering is expected to increase prescription drug utilization trend by:
  - 5.0% for generic
  - 3.0% for preferred brand
  - 2.0% for non-preferred brand
  - 1.0% for specialty
- The 2014 claims distribution is expected to remain the same for the Super Rx offering, with all non-preferred Brand claims migrated to preferred Brand claims.

10. Continued

(a) (*4 points*) Calculate the 2015 expected net prescription drug cost PMPM for the Super Rx offering using the actuarial cost method. Show your work.

(b) (*2 points*) Determine the preferred brand discount required to offset the impact of the increased utilization expected from the Super Rx offering. Show your work.

11. (*7 points*) You are re-rating health coverage for mid-size groups offered by Minnesota Health.

You have been given the following pricing assumptions:

- Credibility = (Average Annual Members / 2000) $^{0.5}$
- Manual rate for 2018 is $600 allowed cost PMPM

You have been given the following information for Paisley LLC, a mid-size client of Minnesota Health:

- 500 members are enrolled in the plan
- The client contributes $300 PMPM toward health coverage
- Member coinsurance is 40%
- The annual out-of-pocket (OOP) maximum is $2,250, and:
  - All high cost members are assumed to reach the OOP maximum
  - No low and medium cost members are assumed to reach the OOP maximum
- The 2016 loss ratio is 70%
- Annual allowed trend is 5.41%
- The expected paid-to-allowed cost ratio in 2018 is 0.9

Paisley LLC claims experience for 2016:

Type of Member	Distribution	Claims Paid PMPY
Low Cost	10%	$270
Medium Cost	80%	$810
High Cost	10%	$40,500

The finance department has provided the following cost assumptions for 2018:

Administrative fees	$35 PMPM
Taxes and other fees	$5 PMPM
Commissions (% of revenue)	8%
Profit Margin (% of revenue)	2%

(a) (*1 point*) Calculate the 2016 paid-to-allowed claims ratio for Paisley LLC. Show your work.

11. Continued

(b) (*4 points*)

(i) (*3 points*) Calculate the 2018 premium and the two-year rate increase for Paisley LLC based on a target loss ratio of 85%. Show your work.

(ii) (*1 point*) Comment on the sufficiency of the rates calculated based on the finance department's stated assumptions. Show your work.

(c) (*2 points*) Paisley LLC has elected to drop group coverage altogether. The individual exchange actuary at Minnesota Health would like to have the experience of Paisley LLC to estimate enrollment and costs for its Silver plan.

List and explain elements, other than taxation, that should be considered when adjusting the experience of Paisley LLC to develop rates for the individual exchange.

12. (*6 points*) The CFO of Raspberry Corporation would like to reduce its contributions to employee health benefits but is also concerned about employee turnover. Raspberry Corporation offers two plan options to its 1,000 employees:

	2017	
	Plan 1	**Plan 2**
Total premium PEPM	$400	$200
% enrolled	60%	40%
Expected benefit cost PEPM	$380	$195

In 2018, Raspberry Corporation will add Plan 3 with a total premium PEPM of $300. Raspberry Corporation is deciding between the following employee contribution strategies for all plan options:

- 25% of total premiums
- $70 PEPM

(a) (*1 point*) Describe employer considerations in determining the appropriate level of financial commitment to their benefit plans.

(b) (*4 points*) Assuming equal enrollment in Plan 1 and Plan 3:

(i) (*2 points*) Calculate the number of employees that must select Plan 2 in order for Raspberry Corporation to be indifferent to the employee contribution strategies. Show your work.

(ii) (*2 points*) Recommend one of the employee contribution strategies assuming that 25% of employees select Plan 2. Justify your recommendation.

Raspberry Corporation has developed the following pricing for 2018:

	Plan 1	**Plan 2**	**Plan 3**
Total premium PEPM	X	$200	$300
Expected benefit cost PEPM	$395	$195	$290

(c) (*1 point*) Determine the 2018 total premium PEPM for Plan 1 that will maintain the 2017 aggregate expected benefit cost-to-premium ratio using your recommendation and enrollment assumptions from part (b)(ii). Show your work.

13. (*5 points*) Prince Corporation operates in three distinct geographic regions and is transitioning its employer-sponsored health coverage to a private exchange.

Prince Corporation provides employee-only coverage and is considering contracting with PRPL Insurance and REDCOR Insurance through the private exchange to deliver the same benefits plan.

Next year's enrollment and private exchange pricing are as follows:

		Annual Premium Per Enrollee	
	Enrollees	**PRPL Insurance**	**REDCOR Insurance**
Region 1	200	$4,800	$4,500
Region 2	200	$4,200	$4,500
Region 3	200	$5,400	$5,100

Prince Corporation currently charges $600 per year to each enrollee regardless of region.

Prince Corporation will decrease the employee contribution on the lower cost carrier in each region. Assume that 75% of the enrollees will select the carrier with the lower premium. Employee contributions for the higher cost carrier in each region will remain at $600 per year.

(a) (*1 point*) List common attributes that are central to private exchanges.

(b) (*1 point*) Compare the core attributes of private exchanges and public exchanges established under the Affordable Care Act (ACA).

(c) (*3 points*) Determine the employee contributions for enrollees electing the lower cost carrier in each region that would result in no change to Prince Corporation's costs. Show your work.

14. (*6 points*) You are a pricing actuary for a health insurance company and have been engaged to help price a new plan design.

You are provided the following information:

- Claims frequency table from your company's database:

Claims Range	Frequency	Average Annual Claims Per Member
$0	40%	$0.00
$0.01 - $50.00	25%	$40.00
$50.01 - $150.00	15%	$100.00
$150.01 - $250.00	10%	$200.00
$250.01 - $1,100.00	5%	$375.00
>$1,100.00	5%	$1,500.00

- Details of the new plan design:
  - Deductible: $100
  - Member coinsurance: 40%
  - Annual out-of-pocket limit: $500, inclusive of the deductible

Calculate the employer's expected claims cost per member per year under the new plan design. State any assumptions made. Show your work.

15. (*3 points*)

(a) (*2 points*) Describe arguments for and against cost sharing for group medical insurance.

(b) (*1 point*) Describe two sources of financial or moral risks to the U.S. insurance industry associated with group medical insurance.

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

USE THIS PAGE FOR YOUR SCRATCH WORK