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

Exam GHCORU

AFTERNOON SESSION

Date: Wednesday, October 28, 2015
Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 7 questions numbered 10 through 16 for a total of 40 points. The points for each question are indicated at the beginning of the question. Questions 10 and 11 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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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 10

Questions 10 and 11 pertain to the Case Study.
Each question should be answered independently.

10. (*4 points*) Quantum Health Insurance Company has asked you to assist with preparing the 2016 rate filing for its small group PPO products.

Your new employee suggests the following methodology for the manual rate development:

- Use January 2014 – March 2015 Individual (HMO & PPO combined) paid claims obtained from another department as the experience base.
- Use historical average cost per service to develop claim cost trends.

(a) (*1 point*) Describe the application of ASOP 23 to the rate development.

(b) (*3 points*) Critique the manual rate methodology suggested and recommend a preferred approach. Justify your response.

Questions 10 and 11 pertain to the Case Study.
Each question should be answered independently.

11. (*7 points*) Quantum asks you to help develop the trend assumption for their 2016 SHOP premium development. Quantum wants to factor in the effect of a new managed care program, which is expected to have the following impacts:

- Inpatient and Outpatient utilization levels will stay flat from 2014 to 2016
- Physician and Rx utilization levels will increase 2% faster than historical levels each year over the same period

Quantum does not believe the average allowed costs per service will be impacted by these programs in any material way and intends to use the historical observed cost trends from 2012 to 2014.

Quantum will be discontinuing its grandfathered small group Legacy III block of business at the end of 2015 and migrating those groups into its SHOP segment.

After discussions with Quantum, management informs you that the Legacy III block had benefits costs that were 10% lower than the SHOP block. Management expects that when these members migrate to SHOP, they will buy benefits that will more closely mirror the current benefit mix of the SHOP population.

You are provided with the following assumptions:

- 50% of the Legacy III enrollment as of December 2014 will migrate to the SHOP block in 2016, with the remainder lapsing sometime in 2015
- The SHOP enrollment levels in 2016, before accounting for the Legacy III migration, will be very similar to the December 2014 enrollment levels
- The 2014 claims experience from the Legacy III block of business should be combined with the HMO and PPO SHOP business when developing 2016 premium rates

(a) (*5 points*) Calculate for each service category:

(i) Expected annual utilization per 1,000 members in 2016

(ii) Allowed cost per service in 2016

Show your work.

11. Continued

(b) (*1 point*) Calculate the average annual per member claim cost trend between 2014 and 2016. Show your work.

(c) (*1 point*) Calculate the projected average PMPM claims cost of the combined enrollment in 2016 using Exhibit 7 as the source of the Legacy III and SHOP HMO & PPO 2014 claim costs and your trend results from part (b). Show your work.

12. (*5 points*) You are an actuarial analyst at a large U.S. health insurer.

One of your clients has a coinsurance level of 80% for prescription drugs. Due to the recent emergence of high-cost specialty drugs, the client is concerned that its employees are at increased risk of catastrophic out-of-pocket costs.

Prescription drug costs are as follows:

Type of drug	Number of scripts per 1,000 members	Gross cost per script
Generic	16,000	$25
Preferred Brand	5,000	$75
Non-Preferred Brand	2,500	$150
Specialty	30	$12,000

(a) (*1 point*) Explain why insurers prefer to have individuals share in the cost of a group benefits plan.

(b) (*2 points*) List and describe reasons for recent increases in prescription drug costs in the United States.

(c) (*2 points*) Management is considering replacing the specialty drug co-insurance of 80% with a co-payment of $500 per script. Calculate the employer coinsurance level for non-specialty drugs that will result in no change to overall expected plan costs. Assume there are no changes in utilization. Show your work.

13. (*7 points*) You are a Long Term Care (LTC) actuary reviewing LTC claims experience from a relatively new block of business in order to determine if premium rate increases are required.

(a) (*3 points*)

(i) List key assumptions used to determine if LTC rate increases are required.

(ii) Identify challenges in correctly setting these assumptions.

(b) (*4 points*) You make the decision to increase premium rates. Your manager disagrees, arguing:

1. LTC insurance products are annually renewable.

2. The historical loss ratio without the proposed rate increase is not severe which means the company has experienced significant profit so far.

3. If the company raises rates, it can expect significant shock lapses which will decrease premiums and therefore profit.

4. The block was recently issued, so a rate increase cannot be pursued until performance has deteriorated to be more than moderately adverse.

5. Model projections are uncertain; the company should wait and see if worsening experience unfolds before raising premium rates.

6. Persistency is higher than expected, so the company should collect more than enough premium to pay future claims.

State whether you agree or disagree with each of your manager's arguments and justify your responses.

14. (*8 points*) Bute LLC is a Canadian company that offers a flexible benefits plan to its employees. There are two options available: a core plan and an enhanced plan. The company is resistant to changes in the plan design and will not change price tags by more than 10%.

You have been hired to review the current price tags.

You are provided with the following information:

- 2015 claims:
  - Core: $150,000
  - Enhanced: $1,000,000
- 2015 and 2016 retention (reflected in price tags):
  - Claims administration expenses = 3.5% of claims
  - Annual enrollment expenses = $15 per employee per year
  - Profit charges = 1.5% of claims
- Trend: 5.0% per annum

	Number of members per employee	2015 Enrollment (number of employees)		Current (2015) Price Tags (annual)	
		Core	Enhanced	Core	Enhanced
Single	1.0	75	186	$450	$650
Couple	2.0	121	218	$890	$1,280
Family	3.0	50	229	$1,320	$1,900

The Enhanced plan design is 70% richer than the Core plan.

(a) (*4 points*) Calculate the realistic price tags for 2015. Show your work.

(b) (*2 points*) Explain how differences between actual price tags and realistic price tags calculated in (a) impact the plan's participation and its costs.

(c) (*2 points*) Draft a memo to Bute LLC recommending a set of 2016 price tags. Justify your response.

15. (*6 points*) Smithe Inc. offers a fully employer-paid group term life insurance benefit of one times salary to its four U.S. employees.

The employees supplement their group life policies with individual coverage of two times salary.

Employee profiles and premium rates are provided below:

Name	Annual Salary	Monthly IRS Uniform Premium Rate per $1,000	Income Tax Rate	Group Monthly Premium Rate per $1,000	Individual Monthly Premium Rate per $1,000
Olga F.	$250,000	$0.23	40%	$0.35	$0.05
Jackie S.	$150,000	$0.43	35%	$0.35	$1.00
John J.	$90,000	$1.27	30%	$0.35	$0.25
Steve R.	$75,000	$1.27	25%	$0.35	$0.25

The company has decided to invest additional funds in employee benefits and is considering two options:

- Increasing the group life insurance benefit to three times salary; or
- Contributing $1,000 per employee into a health savings account.

The group insurer would offer a discount of 10% on the premium rate if Smithe Inc. increases the benefit to three times salary.

(a) (*1 point*) List and describe typical group term life insurance plan benefit designs.

(b) (*1 point*) List and describe typical features of group term life insurance plans that are intended to protect employees from a lapse in coverage due to disability.

(c) (*3 points*) Calculate the financial impact of increasing the group life insurance benefit to three times salary on:

(i) Smithe Inc.

(ii) Each individual employee

Show your work.

(d) (*1 point*) Draft a memo to Smithe Inc. recommending one of the options under consideration. Justify your response.

16. (*3 points*) Meares Co. has hired a new HR director. The company is small, but has a well-established foothold in its marketplace. The director has reviewed the results of a recent employee benefits survey and has sent you, an external benefits consultant, the following email:

> *Dear Consultant,*
> *Our market research shows we spend more per employee on group medical benefits than any of our nearest competitors, and yet, the results of our employee survey have indicated that employees are profoundly unaware of the costs of their benefits.*
>
> *We are partly to blame, for three main reasons:*
> 1. *We could have better communicated the benefits plan to our employees.*
> 2. *We pay 100% of the premiums.*
> 3. *The plan's coinsurance level is 100%.*
>
> *I am hopeful we can spend some time next week evaluating our plan and discussing our options further.*
> *Victoria B. Columbia, HR director, Meares Co.*

(a) (*1 point*) List the overall questions to be considered in evaluating any existing or newly created employee benefits plan.

(b) (*2 points*) Explain reasons why:

(i) Communicating employee benefit programs is challenging to plan sponsors.

(ii) Employees of a small company should share in the costs of medical benefits.

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

USE THIS PAGE FOR YOUR SCRATCH WORK

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