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

Exam GHCORU

MORNING SESSION

Date: Wednesday, November 2, 2016

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 5 questions numbered 8 through 12.

The points for each question are indicated at the beginning of the question. Questions 5, 6, 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.

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.** (7 points) You have been asked to explain some of the implications of individual subsidies in the Affordable Care Act (ACA).
- (a) (1 point) List the ACA provisions that exert upward pressure on individual premiums.
 - (b) (2 points) List and describe ACA provisions intended to lower individual premiums.
 - (c) (1 point) Explain how the structure of the ACA might discourage younger individuals from buying ACA applicable plans.

You are given the following information for a single individual faced with evaluating 2014 health coverage options.

- Age: 24
- 2013 Gross Income: \$28,725
- 2014 expected billed medical cost: \$800
- 2014 expected allowed medical cost: \$500

1. Continued

You are also given the following information:

| Household Size | Federal Poverty Level (FPL) |
|----------------|-----------------------------|
| 1 | \$11,490 |
| 2 | \$15,510 |
| 3 | \$19,530 |
| 4 | \$23,550 |

| Income as % of FPL | Cap % (Lower End) | Cap % (Higher End) |
|--------------------|-------------------|--------------------|
| Up to 133% | 2.00% | 2.00% |
| 133% - 150% | 3.00% | 4.00% |
| 150% - 200% | 4.00% | 6.30% |
| 200% - 250% | 6.30% | 8.05% |
| 250% - 300% | 8.05% | 9.50% |
| 300% - 400% | 9.50% | 9.50% |

| | Bronze | Silver | Gold | Platinum |
|-----------|--------|--------|-------|----------|
| Carrier A | \$173 | \$202 | \$230 | \$258 |
| Carrier B | \$192 | \$224 | \$255 | \$287 |

- (d) (3 points) Determine the optimal coverage decision for this individual based solely on cost. Show your work.

2. (8 points) Your firm’s main product is “Credit One”, a 10-year Annual Premium Non-Guaranteed Renewable Credit Life Insurance product. (Annual Premium means that each year’s premium is collected at the beginning of the policy year.)

You are given the following:

- The sales target for 2017 is \$1,000,000 in revenue.
- The strategy is to sell 10,000 Credit One policies at an annual premium of \$100 per policy according to the following plan.

Sales Plan 2017:

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---------------|-------|-----|-----|-------|-----|-----|-------|-----|-----|-----|-----|-------|
| Policies Sold | 2,000 | - | - | 3,000 | - | - | 4,000 | - | - | - | - | 1,000 |

- (a) (1 point) Describe the differences between a “short duration” contract and a “long duration” contract.
- (b) (1 point) Explain why this sales plan will not produce \$1,000,000 in revenue.
- (c) (1 point) Calculate how much revenue the Sales Plan will generate for the firm for the full financial year. Show your work.
- (d) (1 point) Recommend four different options to modify the sales strategy to achieve the revenue target.

The firm also sells a Whole Life insurance product (called “Life One”) where policyholders pay monthly premiums of \$10. The product has an average duration of 50 years.

You are given the following:

- The sales target is 1,000 Whole Life policies sold in January 2017.
 - Estimated gross margin in 2017 is \$120,000.
 - Gross margin = revenue minus claims.
- (e) (1 point) Explain why the gross margin estimate is incorrect.

2. Continued

You are given the following assumptions:

| Expense Item | Credit One | Life One |
|------------------------------------|-------------------------|-----------------------|
| Policy Issuance Costs | \$7 per policy | \$12 per policy |
| Sales Up-Front Bonus | 5% of Year 1 Premium | 75% of Year 1 Premium |
| Maintenance Costs | 0.6% of Monthly Premium | \$2 per month |
| Allocated Salaries of Underwriters | \$10,000 | \$6,000 |
| Other Fixed Overhead Costs | \$15,000 | |

- (f) (2 points) Calculate the total expenses in 2017 for the original sales plan for each product. Show your work.
- (g) (1 point) Describe briefly what items a life insurance company should disclose in its financial statements according to SFAS 60.

3. (12 points) You are an actuary working for a state that has not expanded Medicaid under the ACA.

- (a) (1 point) List the major eligibility groups under Medicaid.
- (b) (1 point) Describe the characteristics of the ACA Medicaid expansion population.

You are given the following:

- The state is setting budget targets for the 2017 calendar (benefit) year.
- The budget authority has targeted savings of \$11,000,000 from total 2015 healthcare costs by making the following benefit changes:
 1. The state will no longer cover laboratory and pathology testing or dental care.
 2. The following cost sharing features will be introduced:
 - Emergency room copay
 - Copay for outpatient surgeries
 - Copay office visits for adults with no dependents
 - Coinsurance for pharmaceuticals filled outside the area designated as targeted for urban renewal and development.
- Projected member months for 2017 are 643,000 adults and 972,000 children

| | 2015 PMPM experience | | Annual Pricing Trend | Estimated savings from cost sharing |
|----------------------|----------------------|-----------------------|----------------------|-------------------------------------|
| | Adults | Mandatory Children<18 | | |
| Member Months | 680,000 | 900,000 | | |
| Inpatient Care | \$22.00 | \$14.00 | +1.5% | 0% |
| Emergency Room | \$8.00 | \$4.00 | -1.5% | 20% |
| OP Surgery | \$7.75 | \$4.00 | +4.0% | 20% |
| Lab/Path Tests | \$4.00 | \$3.00 | +4.0% | 100% |
| OP other | \$11.00 | \$8.00 | +2.0% | 0% |
| Physician Maternity | \$4.00 | \$1.00 | -1.5% | 0% |
| Physician Other | \$12.00 | \$9.00 | +1.5% | 5% |
| Dental | \$4.00 | \$2.50 | +0.5% | 100% |
| Pharmacy | \$12.00 | \$6.00 | +3.0% | 33% |
| Total | \$85.75 | \$59.50 | | 9.8% |

- (c) (6 points) Critique the proposed changes. Show your work.
- (d) (4 points) Calculate the achievable impact to the state budget. Show your work.

4. (6 points) JB, Inc. provides Medigap coverage through California Trans United Insurance (CTU) on a self-funded basis.

- (a) (1 point) Describe the reasons why JB would want to offer a retiree benefits package.
- (b) (2 points) Discuss trends in the prevalence of retiree health benefits in the public sector versus the private sector.

You are given the following information:

| | JB Medigap Plan | Medicare Part A | Medicare Part B |
|-----------------------|------------------------|------------------------|------------------------|
| Deductible | \$250 | \$1,260 | \$147 |
| Coinsurance | 20% | n/a | 20% |
| Out-of-Pocket Maximum | \$750 | n/a | n/a |

One of JB’s retirees incurred the following non-preventive, non-elective physician claims in 2015:

| | Billed Amount | Medicare Allowed Amount |
|------------|----------------------|--------------------------------|
| Claimant A | \$1,400 | \$545 |

CTU reimburses physicians at a 40% discount.

- (c) (2 points) Determine which of the following COB methods results in the lower plan cost for this member:
 - (i) Standard COB
 - (ii) Exclusion

Show your work.

- (d) (1 point) Describe plan design changes JB should consider in order to reduce their expected future cost.

Questions 5 – 6 pertain to the case study.
Each question should be answered independently.

5. (8 points)

- (a) (2 points) Determine whether Quantum has sustainable growth based on its 2013 and 2014 experience. Show your work.
- (b) (2 points) Describe actions Quantum could take to mitigate the risk identified in (a).
- (c) (1 point) Explain why Quantum may not choose to take each of the actions identified in (b).
- (d) (1 point) Describe the three main items of a cash flow statement.
- (e) (2 points) Identify how changes in items on the balance sheet would impact Quantum's cash flow statement for 2014.

**Questions 5 – 6 pertain to the case study.
Each question should be answered independently.**

- 6.** (12 points) Quantum is reviewing its health product offerings in light of the ACA rules.
- (a) (2 points) Describe the market reforms under the ACA and how they apply to Quantum products.
 - (b) (1 point) Outline consumer protection reporting requirements for ACA experience for small and large groups.
 - (c) (1 point) Describe the components of the conventional MLR calculation and the ACA MLR calculation.
 - (d) (2 points) Calculate the maximum potential member rebate due for 2014 for each of the Quantum health insurance products and identify any adjustments that might apply. Show your work.

You are given the following information for pricing 2017 products:

- 2017 benefits remain the same as 2014
- Taxes, licenses and regulatory fees: 2% of premium
- Quality Improvement Expense (QIE): 1% of premium
- Average months of enrollment for individual products: 10
- Average months of enrollment for small group products: 11

| Product | Annual Claims Trend | Annual Premium Trend | Projected Membership |
|--------------------|---------------------|----------------------|----------------------|
| Legacy Individual | 4% | 8% | 20,000 |
| Individual HMO | 3% | 7% | 15,000 |
| Individual PPO | 3% | 7% | 42,000 |
| Legacy Small Group | 4% | 6% | 17,000 |
| Small Group HMO | 2% | 5% | 18,000 |
| Small Group PPO | 4% | 6% | 41,000 |

- (e) (6 points)
 - (i) (4 points) Estimate the 2017 ACA MLR(s) for Quantum products. Show your work.
 - (ii) (2 points) Recommend actions to reduce member rebates and provide an example of a tactic for each recommendation.

7. (7 points) You are the Head of Underwriting at SFO Insurance Company, a provider of Disability Income Coverage in the United States.

(a) (1 point) List the notable exceptions to Social Security coverage for U.S. workers.

You are given the following information regarding Social Security credits:

- Workers earn Social Security Credits at a rate of one per \$1,120 of covered earnings with the standard maximum per year
- Minimum required Social Security Credits for disability-insured status:

| Age | Number of Credits |
|-----|-------------------|
| 21 | 6 |
| 30 | 10 |
| 40 | 20 |

You are given the following information for three disability claimants:

| Worker | Time of Onset of Disability | Annual Salary for Entire Time Working | Time Worked and Paid Social Security Taxes |
|--------|--|---------------------------------------|--|
| Grace | First quarter of her 21 st year | \$30,000 | <ul style="list-style-type: none"> • Worked continuously from beginning of 18th year until onset of disability. • Grace earned \$1500 of covered earnings in the first quarter of her 21st year. |
| Jerry | First quarter of his 30 th year | \$10,000 | <ul style="list-style-type: none"> • Worked continuously from beginning of 18th year to the second quarter of his 23rd year. • Jerry earned \$3,000 of covered earnings in his 23rd year. • Jerry has not worked since the second quarter of his 23rd year. |
| Janis | First quarter of her 40 th year | \$100,000 | <ul style="list-style-type: none"> • Worked continuously from beginning of 18th year to the first quarter of 34th year. • Janis earned \$1,200 of covered earnings in her 34th year. • Janis has not worked since her 34th year. |

7. Continued

- (b) (2 points) Determine if these individuals qualify for Social Security Disability Insurance. Justify your answer.
- (c) (2 points) Assume a worker qualifies for Disability-Insured status.
 - (i) Describe the issues involved in determining whether the worker can receive disabled-worker benefits.
 - (ii) Describe how the worker, once receiving disabled-worker benefits, can lose those benefits.
- (d) (2 points) Describe what risk SFO needs to consider when accounting for a possible benefit from Social Security Disability Insurance, and how SFO can mitigate this risk.

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

USE THIS PAGE FOR YOUR SCRATCH WORK