

# Exam GH-101

Date: Monday, March 23, 2026

---

## INSTRUCTIONS TO CANDIDATES

### General Instructions

1. This examination has 7 questions numbered 1 through 7 with a total of 50 points.

The points for each question are indicated at the beginning of the question.

2. 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 provided in this document.

### Written-Answer Instructions

1. **Each question part or subpart should be answered in the Excel file.** Graders will only look at work in the Excel file.
  - a) In the Excel document formulas should be entered. Performing calculations on scratch paper or with a calculator and then entering the answer in the cell will not earn full credit. Formatting of cells or rounding is not required for credit, as long as your work and assumptions are clear to an individual with average Excel experience reviewing the submitted file.
  - b) Individual exams may provide additional directions that apply throughout the exam or to individual items.
2. The answer should be confined to the question as set.
3. Prior to uploading your Excel file, the file should be saved and renamed with your five-digit candidate number in the filename.
4. The Excel file that contains your answers must be uploaded before the five-minute upload period expires.

*The Excel spreadsheet has additional data and information applicable to this question.*

**1.**  
(8 points)

- (a) (1 point) Describe the various parties and external considerations when designing an employee benefits strategy.

*All responses are to be provided in the Excel spreadsheet.*

You are an actuary assisting your client, Behemoth Corp., with harmonizing their medical benefits for its employees following their recent acquisition of Start-Up Inc.

In the Excel spreadsheet, you are given more information.

- (b) (5 points) Calculate the annual difference in costs to Behemoth for transitioning Start-Up employees to Behemoth's benefit package compared to allowing them to continue on their current package. Show your work.

*All responses are to be provided in the Excel spreadsheet.*

- (c) (1 point) Evaluate the drivers of the difference in costs between the two options in part (b).

*All responses are to be provided in the Excel spreadsheet.*

- (d) (1 point) Recommend to the benefits manager whether she should continue operating Start-Up's previous benefit package or enroll the Start-Up employees in Behemoth's benefit package. Justify your answer.

*All responses are to be provided in the Excel spreadsheet.*

*The Excel spreadsheet has additional data and information applicable to this question.*

**2.**  
(8 points)

- (a) (2 points)
- (i) (1 point) Describe the three dimensions in defining a medical plan.
  - (ii) (1 point) List two examples of each dimension.

*All responses are to be provided in the Excel spreadsheet.*

- (b) (2 points) Compare and contrast the impact to utilization of service and cost control for each of an HMO and a PPO.

*All responses are to be provided in the Excel spreadsheet.*

You are an actuary at a large employer that is evaluating changes to its group medical plan. The employer currently offers a PPO:

Deductible	\$1,000
Coinsurance (Plan)	80%
Out of Pocket Max	\$5,000
Inpatient and Outpatient	Deductible / Coinsurance
Professional Services	Copay
Pharmacy	Copay
Access	Broad Network

## 2. Continued

Management is considering moving to a Consumer Directed Health Plan (CDHP) with the following features:

Deductible	\$3,000
Coinsurance (Plan)	100%
Out of Pocket Max	\$3,000
Inpatient and Outpatient	Deductible / Coinsurance
Professional Services	Copay
Pharmacy	Copay
Access	Broad Network
Health Savings Account (HSA) Contribution	\$500

Management's objectives are to:

- 1) Reduce overall health care costs
- 2) Encourage employees to become more cost-conscious consumers
- 3) Maintain access to quality care

- (c) (2 points) Identify and describe two differences between the current PPO plan and the proposed CDHP that could impact employee behavior and plan costs.

*All responses are to be provided in the Excel spreadsheet.*

- (d) (1 point) Explain risks the employer may face in transitioning to the CDHP.

*All responses are to be provided in the Excel spreadsheet.*

- (e) (1 point) Propose two strategies management can implement to improve the transition. Justify your response.

*All responses are to be provided in the Excel spreadsheet.*

*The Excel spreadsheet has additional data and information applicable to this question.*

### 3.

(7 points) You are given the following rating variables:

- Provider reimbursement arrangements
- Group characteristics, such as industry and group size

(a) (1 point) For each rating variable:

- (i) (0.5 points) Explain why the variables need to be normalized when analyzing historical data for prospective pricing.
- (ii) (0.5 points) Identify and describe a scenario when normalizing the rating variable would have a material impact on pricing.

*All responses are to be provided in the Excel spreadsheet.*

Company ABC is estimating its expected medical claim costs for 2026 on a non-credible large group book of business, Group A, as it looks to grow its presence in a particular market.

ABC has claims experience available from 2023 and 2024, but the volume is not large enough to be considered credible. Therefore, 2024 experience from where ABC has the most business, Largestate, will be the basis for the manual rate.

You are given:

- Table 1 – Membership and Claims (tab Q3 Tables)
- Table 2 – Geographic Area (tab Q3 Tables)
- Table 3 – Age/Gender (tab Q3 Tables)
- Annual trend is assumed to be 6.5%.
- The manual rate composite geographic area factor is 0.958
- 25% weight will be given to 2023 experience, 25% weight to 2024 experience, and 50% weight to the manual rate.

(b) (3 points) Calculate ABC's 2026 allowed claim cost for Group A. Show your work.

*All responses are to be provided in the Excel spreadsheet.*

### 3. Continued

You are given:

- Table 4 – Cost and Utilization Data

(c) (2 points) Calculate the current Net Benefit PMPM. Show your work.

*All responses are to be provided in the Excel spreadsheet.*

ABC's CFO has proposed increases to member copays to reduce ABC's medical cost liability.

You are given the following changes to member copays:

- Increase inpatient hospital copays from \$200 to \$300
- Increase outpatient ER copays from \$100 to \$250
- Establish a new \$10 copay for physician lab/X-ray services.
- All other copays remain at their current levels.

(d) (1 point) Calculate the new net benefit PMPM after the copay updates. Show your work.

*All responses are to be provided in the Excel spreadsheet.*

*The Excel spreadsheet has additional data and information applicable to this question.*

**4.**

(6 points) You are an actuary for ABC Insurance and are evaluating the pricing of health benefit choices at XYZ Company.

You are given:

XYZ is fully insured by ABC.

XYZ currently offers three health plans to its employees:

Health Plan	Metallic Level	Monthly Insurer Premium Rates
A	Bronze	\$500
B	Silver	\$600
C	Gold	\$800

Year 1 premiums are not adjusted for anticipated selection.

XYZ will contribute \$400 per month.

XYZ's employee census, morbidity, and Year 1 plan selection:

Risk Group	# of Employees	Relative Health Status	
		(Morbidity)	Year 1 Plan
1	500	40%	A
2	200	70%	B
3	300	100%	B
4	100	150%	C
5	200	300%	C
6	500	Unknown	Waived

ABC Insurance increases the premium rates by 5% in Year 2.

XYZ would like to offer more competitive health coverage options in Year 2 and has the following two proposals:

**Proposal 1:**

XYZ increases the premium contributions by \$50.

Risk groups 1, 3, and 5 are expected to stay in their current plan.

Risk groups 2 and 4 are expected to move to the next lower-priced option.

50% of those who waived in year 1 elect coverage in year 2 for plan A. 50% continue to waive coverage.

## 4. Continued

### Proposal 2:

XYZ offers a new lean plan option with a premium of \$450 per month.  
The same employees who newly elected coverage in year 2 from Scenario 1 enroll in the new lean plan  
Half of Risk Group 1 enrollees elect the new lean option  
All other enrollees remain in their same health plan

- (a) (3 points) Calculate the estimated morbidity of the new enrollees in year 2, under Proposal 1, given the break-even selection load for ABC of 10%. Show your work.

*All responses are to be provided in the Excel spreadsheet.*

- (b) (2 points) Calculate the selection load needed in year 2 for ABC to break even under Proposal 2. Show your work.

*All responses are to be provided in the Excel spreadsheet.*

After receiving the renewal, XYZ would like to consider an ASO funding arrangement with Aggregate Stop Loss (ASL) and Specific Stop Loss (SSL) coverages.

- (c) (1 point) Contrast this funding arrangement with a Traditional Fully Insured plan.

*All responses are to be provided in the Excel spreadsheet.*

*The Excel spreadsheet has additional data and information applicable to this question.*

**5.**

*(9 points)*

- (a) *(2 points)* Describe advantages and disadvantages of self-insurance, including how a level-funded product addresses a disadvantage, mitigates an advantage, or has no impact, by completing the grid in Excel.

*All responses are to be provided in the Excel spreadsheet.*

You are the actuary for Company ABC, which is considering moving from its fully-insured medical coverage to either a level-funded or self-funded arrangement. Your CFO has asked to see how these three arrangements would have performed for the prior plan year.

- (b) *(3 points)*
- (i) *(1 point)* Calculate the cash flows by month for each of the three funding arrangements by using the table and chart in Excel. Show your work.
- (ii) *(1 point)* Explain how the level funded plan generates the cash flow illustrated in part (i).
- (iii) *(1 point)* Interpret the chart.

*All responses are to be provided in the Excel spreadsheet.*

- (c) *(3 points)*
- (i) *(1 point)* Calculate how the claims liability for Company ABC changes as the annual claims increase. Use the table and chart in Excel. Show your work.
- (ii) *(1 point)* Explain how the level funded plan generates the claims liability illustrated in part (i).
- (iii) *(1 point)* Interpret the chart.

*All responses are to be provided in the Excel spreadsheet.*

- (d) *(1 point)* Recommend a funding arrangement to the CFO. Justify your response.

*All responses are to be provided in the Excel spreadsheet.*

*The Excel spreadsheet has additional data and information applicable to this question.*

**6.**

(6 points)

- (a) (1 point) Describe the phases of the technology curve following the introduction of new technology.

*All responses are to be provided in the Excel spreadsheet.*

You are an actuary at Insurer ABC setting the trend assumptions for a Group Health product.

- (b) (2 points) Calculate the following. Show your work.

- Unit Cost Trend
- Change in Severity
- Core Unit Cost Trend

*All responses are to be provided in the Excel spreadsheet.*

Within this service category, a new technology emerged in the period impacting the trend calculated in part (b). Your manager is questioning the projected 20X5 Core Unit Cost Trends, pointing out the technology is entering Phase 3 Steady State of the Technology Curve, and is recommending a one-time change assumption to account for the technology change.

- (c) (3 points) Recommend a projected 20X5 Net Paid Trend. Justify your assumptions and show your work.

*All responses are to be provided in the Excel spreadsheet.*

*The Excel spreadsheet has additional data and information applicable to this question.*

**7.**  
(6 points)

- (a) (2 points) Compare the features of a Health Savings Account (HSA), Health Reimbursement Account (HRA) and Flexible Spending Account (FSA) by completing the table below in Excel.

<b>Feature</b>	<b>HSA</b>	<b>HRA</b>	<b>FSA</b>
Who owns the account?			
Who can contribute?			
Are contributions tax-deductible?			
Can the funds roll over to the next year?			
What distributions are tax-free?			
What distributions are not eligible?			
Is an HDHP required?			

Your employer offers two health plans to its employees. Plan A is an HDHP PPO. Plan B is a major medical HMO. It is open enrollment, and you are deciding which plan to choose for employee-only coverage based on services you plan to utilize in the upcoming plan year.

The plan designs are as follows:

	<i>Plan A In-Network</i>	<i>Plan B</i>
Deductible	\$2,200	\$1,000
Coinsurance – Med/Specialty Rx	20%/30%	10%/20%
Maximum Out-of-Pocket	\$4,400	\$1,700

## 7. Continued

You are expecting three claims to occur in the following order and are in-network for both plans

- Claim #1: Ambulatory surgical procedure with allowed cost of \$1,200
- Claim #2: Specialty Rx Drug A with allowed cost of \$2,500
- Claim #3: Nephrologist visit and a set of lab work with total allowed cost of \$750

(b) (2 points)

- (1 point) Calculate the expected cost sharing difference between Plan A and Plan B. Show your work.
- (1 point) Describe additional considerations, beyond anticipated cost sharing, for choosing between Plan A and Plan B.

*All responses are to be provided in the Excel spreadsheet.*

You learned that U.S. lawmakers are developing proposals on expanding the usage of HSAs in major medical health plans beyond current limitations.

(c) (2 points) Explain how allowing HSAs to be utilized for the following differs from current regulation:

- Health care premiums
- Over-the-counter health supplies
- Pre-funding long-term care needs

*All responses are to be provided in the Excel spreadsheet.*

**\*\*END OF EXAMINATION\*\***