

Exam GH 201-C

Date: Wednesday, November 19, 2025

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has 6 questions numbered 1 through 6 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.

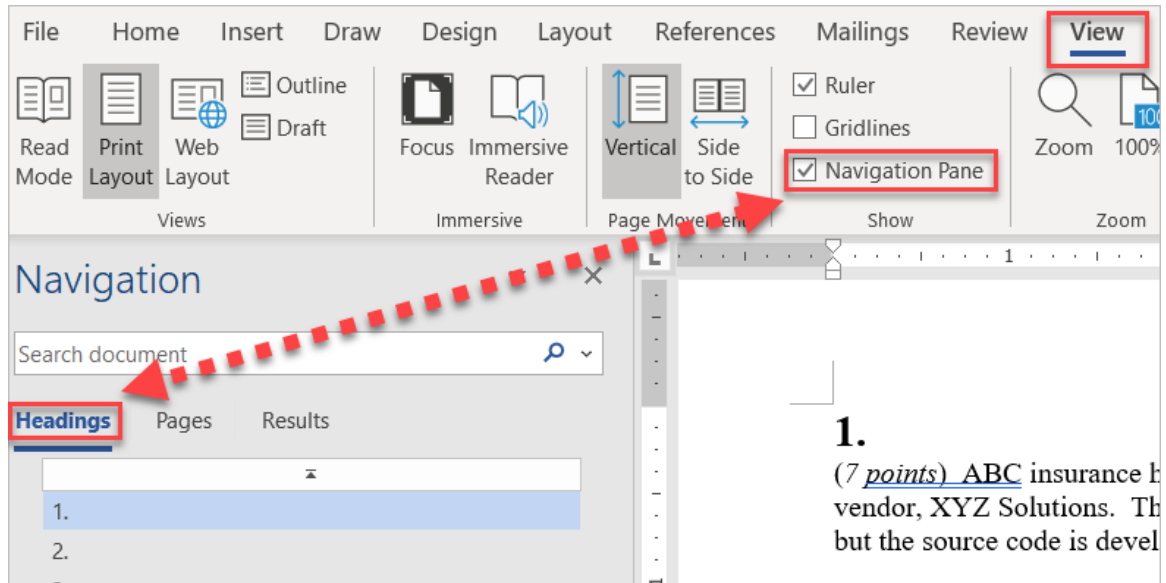
Written-Answer Instructions

1. Each question part or subpart should be answered either in the Word document or the Excel file as directed. Graders will only look at work in the indicated file.
 - a) In the Word document, answers should be entered in the box marked ANSWER. The box will expand as lines of text are added. There is no need to use special characters or subscripts (though they may be used). For example, β_1 can be typed as beta_1 (and ^ used to indicate a superscript).
 - b) 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.
 - c) 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 Word and Excel files, each file should be saved and renamed with your unique candidate number in the filename.
4. The Word and Excel files that contain your answers must be uploaded before time expires.

Navigation Instructions

Open the Navigation Pane to jump to questions.

Press Ctrl+F, or click View > Navigation Pane:



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

1.

(7 points) You are the valuation actuary for ABC Insurance and are setting IBNR reserves as of the December 31, 20X3 valuation date.

- (a) (1 point) Describe the characteristics of coverages where the use of the development method is appropriate.

ANSWER:

In the Excel spreadsheet, you have been provided with the following data:

- ABC's cumulative paid claims by incurred month
- Monthly premiums
- Member count

Assume claims are complete after 12 months.

You are using an averaging technique that removes the highest and lowest values using the smoothed age-to-age factors derived from the provided data.

- (b) (3 points) Calculate the IBNR as of the valuation date. State any assumptions and show your work.

The response for this part is to be provided in the Excel spreadsheet.

1. Continued

You want to evaluate the IBNR calculation using two alternative methods.

- Loss ratio method:
 - Use the incurred loss ratio from the past two complete years to develop the IBNR for the most recent two incurred months
- Per Member Per Month (PMPM) projection method:
 - Use the PMPM projection method to substitute for the months where completion factors are below 40% from part (b)
 - Use the past two complete years to develop the PMPMs
 - The trend rate is 5% per annum

(c) (2 points) Calculate the IBNR as of the valuation date using the:

- (i) (1 point) Loss ratio method
- (ii) (1 point) PMPM projection method

State any assumptions and show your work.

<i>The response for this part is to be provided in the Excel spreadsheet.</i>

(d) (1 point) Recommend which method should be used. Justify your answer.

<i>The response for this part is to be provided in the Excel spreadsheet.</i>

2.

(9 points) You are an actuary recently hired by ABC Insurance (ABC). Historically, ABC has prepared separate reporting for Financial Condition Testing (FCT) and Own Risk Solvency Assessment (ORSA). You are tasked with exploring the integration of these reports and improving the financial reporting for specific benefits.

(a) (2 points)

(i) (1 point) List the considerations supporting the integration of FCT and ORSA.

ANSWER:

(ii) (1 point) Describe the challenges of the integration of FCT and ORSA.

ANSWER:

(b) (2 points) List and describe the types of adverse scenarios that should be developed for FCT.

ANSWER:

For this year's FCT, the Chief Financial Officer (CFO) requested improved financial reporting for the following benefits:

Benefit Type	Payment	Annual decrements	Term	Approach for developing Coverage Units (CU)	Opening Contractual Service Margin (CSM) at time 0
Critical Illness (CI)	\$100,000 lump sum upon diagnosis	3%	10-year non-renewable	Liability for Remaining Coverage (LRC) approach	\$100
Disability Insurance (DI)	\$2,500 per month	5%	10-year non-renewable	Liability for Incurred Claims (LIC) approach	\$100

2. Continued

You are given the following assumptions:

- No discounting in the definition of the CU
- No interest accretion of the CSM
- No claim termination

(c) (3 points) Develop the CSM amortization schedule for the following benefits:

(i) (1.5 points) CI

(ii) (1.5 points) DI

State any assumptions and show your work.

The response for this part is to be provided in the Excel spreadsheet.

The CFO has indicated that the LRC would be a better approach for calculating CU for the DI benefit, instead of using the LIC approach.

(d) (1 point) Critique this statement.

ANSWER:

After reviewing your work, the CFO is considering whether to report these two benefits on a consolidated basis.

(e) (1 point) Recommend an approach to the CFO for developing CU for a group of contracts that combine more than one type of coverage. Justify your answer.

ANSWER:

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

3.

(10 points) You are a consulting actuary for Gym-N-Juice, an association of gyms and juicing companies across British Columbia (BC), where members have access to resources on safety, best practices, and training equipment and programs. Entities within the association also have access to the association's group benefits plan on a voluntary basis.

Gym-N-Juice is planning to expand its association across Canada and aims to promote the association's benefits plan by highlighting lower insurer expenses due to economies of scale and underwriting efficiencies.

Fitness Appeal, located in Ontario, has just joined the association and has asked you to review the cost advantages of its own group benefits plan compared to the association's plan.

In the Excel spreadsheet, you have been provided with the following information:

- Gym-N-Juice's association benefits offering
- Fitness Appeal's current benefit plan details

- (a) (3 points) Calculate the health and dental cost difference between the two plans for the 20X3 calendar year. State any assumptions and show your work.

The response for this part is to be provided in the Excel spreadsheet.

Gym-N-Juice wants to ensure a smooth transition and no loss of coverage when a member moves to its association plan.

- (b) (1 point) Describe the Canadian Life and Health Insurance Association (CLHIA) guidelines related to an insured employee who is still disabled on the date of termination of the existing contract.

ANSWER:

3. Continued

Gym-N-Juice is interested in learning more about other vehicles available to deliver the health and dental benefits. In particular, they would like to explore the feasibility of implementing an Employee Life and Health Trust (ELHT) due to its tax efficiency.

- (c) (2 points) List the requirements of an ELHT.

ANSWER:

In the Excel spreadsheet, you have been provided with ELHT financial information.

- (d) (2 points) Calculate the closing balance of the ELHT as of December 31, 20X3. State any assumptions and show your work.

<i>The response for this part is to be provided in the Excel spreadsheet.</i>

Gym-N-Juice has finally decided to implement an ELHT for health and dental benefits. The benefit plan design was established many decades ago when the association was formed, and the plan provisions were aligned with industry standards at the time. At the first board meeting following the formation of the ELHT, the trustees mentioned that some case law exists related to discrimination and noted the recent trend in Diversity Equity and Inclusion (DEI).

- (e) (2 points) Recommend design considerations for the association plan to address the trustees' concerns. Justify your answer.

ANSWER:

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

4.

(7 points) Company XYZ (XYZ) has approximately 100 employees all located in Ontario and is seeking to establish a comprehensive employee benefit plan that includes health, dental, Long-Term Disability (LTD) and life coverage.

XYZ has learned from its group benefit consultant that group policies sold to large employers are often subject to alternative financial arrangements.

(a) (2 points)

(i) (1 point) Describe the commonly available financial arrangements.

ANSWER:

(ii) (1 point) Assess the applicability of each financial arrangement to each type of coverage.

ANSWER:

XYZ has chosen a yearly renewable refund arrangement for its health benefit with ABC Insurance Company (ABC).

In the Excel spreadsheet, you have been provided with financial information of XYZ's benefit plan for the year 20X1.

(b) (2 points) Calculate the following for the year 20X1:

(i) (1 point) Claims Fluctuation Reserve (CFR)

(ii) (1 point) Experience Rating Refund (ERR) liabilities

State any assumptions and show your work.

The response for this part is to be provided in the Excel spreadsheet.

4. Continued

ABC prepares its financial reports in accordance with IFRS 17, but still uses Canadian GAAP reporting to analyze the financial and operational performance of its business units.

- (c) (1 point) Describe the accounting treatment of CFR and ERR under IFRS 17.

ANSWER:

In the Excel spreadsheet, you have been provided with ABC's financial information on its three business units.

- (d) (1 point) Calculate key ratios included in the DuPont Formula for each business unit. State any assumptions and show your work.

<i>The response for this part is to be provided in the Excel spreadsheet.</i>

- (e) (1 point) Explain how each of these ratios should be interpreted.

ANSWER:

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

5.

(11 points) Company XYZ (XYZ) offers an extended health group benefits program on a self-insured basis to its employees located in British Columbia, Alberta, and Ontario.

Company XYZ has raised concerns over the claims experience and has hired you as their consulting actuary to review their current drug program and ensure it aligns with changes in provincial programs.

(a) (2 points) Describe the biologic landscape in Canada from 2010 to 2020 as it relates to:

(i) (1 point) Trends in biologic drugs

ANSWER:

(ii) (1 point) Availability and uptake of biosimilars in Canada

ANSWER:

In the Excel spreadsheet, you have been provided with XYZ's drug plan provisions.

(b) (1 point) Recommend two plan design changes relevant to XYZ based on the initiatives by public and private payers to manage biologic drug costs. Justify your answer.

ANSWER:

XYZ is reviewing plan design alternatives to better integrate with provincial programs.

(c) (3 points) Compare and contrast the provincial drug programs in British Columbia, Alberta, and Ontario by completing the table in the Excel spreadsheet.

The response for this part is to be provided in the Excel spreadsheet.

5. Continued

In the Excel spreadsheet, you have been provided with:

- Annual drug amounts submitted by XYZ's insured members in the most recent year
- British Columbia Fair PharmaCare regular assistance levels

(d) (3 points) Calculate the following for the most recent year:

- (i) (2 points) Amount paid by the provincial drug plans
- (ii) (1 point) Amount paid by XYZ's plan

State any assumptions and show your work.

The response for this part is to be provided in the Excel spreadsheet.

XYZ is interested to know the financial impact of implementing mandatory biosimilar switching in its benefits plans, assuming that the corresponding biosimilar drug cost is 40% of the biologic drug cost.

(e) (1 point) Calculate the cost reduction to XYZ's plan using the submitted claims from the most recent year. State any assumptions and show your work.

The response for this part is to be provided in the Excel spreadsheet.

After an extensive review by XYZ's finance department, they concluded that the savings from implementing biosimilar switching can fully cover the cost of enhancing the drug plans by funding 100% coinsurance with no annual deductible.

(f) (1 point) Assess the finance department's conclusion. Justify your answer.

The response for this part is to be provided in the Excel spreadsheet.

6.

(6 points) Dr. A operates an independent solo practice in a large metro area. Dr. A is considering two offers:

- Join a large group practice, or
- Join a large hospital system.

- (a) (2 points) Compare and contrast the motivations of a large group practice and a large hospital system in extending an offer to Dr. A to join their organization.

ANSWER:

- (b) (2 points) Evaluate potential advantages and disadvantages of each offer for Dr. A.

ANSWER:

- (c) (2 points) Assess the ways in which Dr. A joining with a large hospital system could impact the cost and quality of care in the metro region.

ANSWER:

****END OF EXAMINATION****