GH VRC Model Solutions
Fall 2024

1. Learning Objectives:

1. The candidate will understand and apply valuation principles for insurance contracts.

Learning Outcomes:

(1c) Calculate appropriate claim reserves given data.

(1d) Reflect environmental factors in reserve calculations (trend, seasonality, claims processing changes, etc.).

(1e) Evaluate data resources and appropriateness for calculating reserves.

Sources:

Group Insurance, Skwire, Daniel D., 8th Edition, 2021

- Ch. 39: Claim Reserves for Short-Term Benefits

GHVR-103-16: Health Reserves

Commentary on Question:

This question is mainly aimed to test candidates the methods of estimation for claim reserves. To receive maximum points, candidates need to assess the appropriateness of both reserving methods for part (c) and explain the impact on both IBNR methodology and estimate for part (d).

Solution:

(a) Define the following terms:

(i) Valuation date

(ii) Incurral date

(iii) Reporting date

(iv) Reporting lag

(v) Payment lag

1. Continued

Commentary on Question:
Candidates generally did well on this part. The common mistakes include candidates confusing the service date with the incurral date and misinterpretation of the payment lag.

Valuation date = the date on which reserves are estimated

Incurral date = the date on which an event either causes a reserve or a liability. Can either be the date of death, disability, medical service, or other insured event. Any claim incurred before the valuation date generates a reserve.

Reporting date = the date on which the claim is reported

Reporting lag = the time between the incurral date and the reporting date

Payment lag = the time between the incurral date and the payment date

(b) Calculate the incurred but not reported (IBNR) claims on the emerging small group block as of June 20X2. Show your work.

Commentary on Question:
Some candidates failed to recognize that the claims provided are cumulative. Another portion where candidates struggled was the proper use of the loss ratio method.

See Excel file for solution.

(c) Assess whether the methodology prescribed is appropriate in this situation. Justify your response.

Commentary on Question:
Candidates struggled on this question. The intent of the question was to understand if candidates understood the appropriate use of both the loss ratio and development methods. Few candidates mentioned that completion factors that were not high enough should not be used due to lower credibility. Other reasonable answers were also accepted.

The loss ratio method can be applied in situations in which historical claims costs are not available and in which pricing loss ratios may be deemed to be more appropriate. For new blocks of business without credible history, the loss ratio method may be the best estimate until other information is available to adjust the assumptions

1. Continued

Completion factors in durations 3-4 makes sense, since the completion factors are more credible. Typically, completion factors below 40% to 70% are replaced with other projected fully incurred cost per member estimates or blended under a credibility-weighted approach. Completion factors below 40% to 70% are subject to greater estimation error.

(d) Explain how the following situations may affect your IBNR methodology and estimate:

(i) EMC installs a new claim adjudication system which accelerates reporting and payment times.

(ii) A pandemic causes widespread and sustained closures of medical offices.

(iii) The small group block becomes subject to a risk adjustment mechanism.

(iv) The small group block only offers high-deductible health plans.

(v) EMC experiences an increase in the proportion of its total claims that are inpatient claims.

(vi) EMC changes its provider reimbursements from a fee-for-service model to a capitation model.

Commentary on Question:
Candidates struggled to identify both the impact to the methodology and the resulting change in estimate. Many candidates failed to identify the impact due to risk adjustment or changing the provider reimbursement method.

(i) New adjudication system:
A change in computer systems may be preceded by a speed up in claim processing time as the processing area cleans up its inventory of unpaid claims in anticipation of the computer change. During the system change itself, unanticipated bugs or errors may emerge that slow processing time and create claim backlogs. May need to pick different CFs as a result.

(ii) Pandemic causes medical office closure:
Expect ultimate claims to be significantly lower. May not want to use unadjusted development factors created during the timeframe of office closures for future reporting periods when claims volume returns to status quo.

1. Continued

(iii) Small group subject to risk adjustment:
May be a speed-up of claims processing before the risk adjustment data submission cutoff date in order to increase risk scores. Take caution when applying completion factors or using completion data in future reporting periods.

(iv) Small group block offers only HDHPs:
May see seasonal pattern in paid claims, where paid claims in early durations are much lower because the deductible has not yet been met. Consider adjusting completion factors to account for this seasonality.

(v) Greater proportion of claims are inpatient:
Inpatient claims tend to complete more slowly since they are more complex and take time for the actual claim to complete (i.e., bed days). Other claims, like outpatient and Rx, tend to complete faster because they are more likely to be electronically submitted and processed in real time. EMC may want to decrease the completion factors to account for the longer duration inpatient claims.

(vi) Change from FFS to capitation:
Under capitation, providers are totally compensated by the negotiated capitation rate, so there are no claims to be reported or reserves held for.

2. Learning Objectives:

5. The candidate will understand how to describe and evaluate government programs providing health and disability benefits in Canada.

Learning Outcomes:

(5a) Describe eligibility requirements for social programs in Canada and the benefits provided.

(5b) Describe how private group insurance plans work within the framework of social programs in Canada.

Sources:

Morneau Shepell Handbook of Canadian Pension Benefit Plans, 17th Edition, 2020

- Ch. 2: Government Pension Programs (pp. 44-64, Canada & Quebec Pension Plans)
- Ch. 18: Workers' Compensation
- Ch. 19: Employment Insurance

Commentary on Question:

On part (a), candidates did well answering how Workers Compensation and Employment Insurance relate to disability benefits. However, many candidates were challenged by the disability benefits under the Canada Pension Plan.
On part (b), candidates either did very well or were quite challenged. Those that got the calculation incorrectly, but showed and labelled their work would award partial credit.

Solution:

(a) Describe the following government social programs as it relates to disability benefits:

(i) Workers Compensation

(ii) Employment Insurance (EI)

(iii) Canada Pension Plan (CPP)

Commentary on Question:

The following answers are examples – points were given to other relevant answers.

Workers Compensation

- Disability income for workplace accidents or diseases is provided by the Workers' Compensation system.
- STD benefits are payable to the disabled employee until the employee has recovered and is capable of returning to the pre-accident occupation or, having gone through a rehabilitation program, is estimated capable of earning at the same level as prior to the accident.

2. Continued

- The percentage of earnings used to calculate the benefit amounts vary from jurisdiction to jurisdiction; however, it usually ranges from 75% to 90% of net earnings.
- For LTD, the dual award system is both a monthly benefit based on an earnings loss system (usually calculated as a percentage, such as 90% of net loss of income), which is usually paid out until age 65, and a lump sum payment awarded for the non-economic impacts of the permanent impairment.

Employment Insurance

- For regular benefits the basic benefit rate is 55% of the individual's average insured weekly earnings up to the maximum amount.
- Waiting period for sickness benefits is one week.
- Sickness benefits may be paid up to 26 weeks to an individual who is unable to work because of sickness, injury, or quarantine, but who would otherwise be available for work if not for their incapacity due to medical reasons. *(Marks are given if the candidate answered 15 weeks.)*
- To receive sickness benefits, the claimant is required to have worked for 600 hours in the last 52 weeks or since the last claim and your normal weekly earnings have been reduced by more than 40%.

Canada Pension Plan

- These pensions are payable to a contributor who has a severe and permanent disability and the contributor is unable to engage in any substantially gainful occupation with earnings in excess of a specified threshold.
- Disability benefits are payable monthly from the first of the fourth month following the date of disability and are payable until age 65, at which time the Retirement Pension automatically becomes payable.
- Retirement benefits are based on the benefit at the time of disability indexed for inflation.
- A disabled contributor is entitled to receive a pension that is equal to a flat-rate pension plus an earnings-related component equal to 75% of the contributor's retirement pension, up to a specified maximum.

(b) Calculate the total STD and LTD benefit costs for each employee at January 1, 2024. State any assumptions and show your work.

2. Continued

Commentary on Question:

- *Many candidates did not notice the disability prognosis and applied CPP offset to both Management and Union employees. Additionally, many candidates did not have a reasonable assumption on the starting point of CPP offset. The standard assumption is 24 months, but points were given to candidates if a reasonable assumption (with an appropriate justification).*
- *Candidates did not need to provide all the labelling shown in the model solution on the right-hand side for full credit.*

The model solution for this part is in the Excel spreadsheet.

3. Learning Objectives:

4. The candidate will understand and evaluate post-retirement and post-employment benefits in Canada.

Learning Outcomes:

(4c) Determine employer liabilities, service cost and expense for post-retirement and post-employment benefits for financial reporting purposes under IFRS and understand differences compared to US GAAP.

(4d) Describe funding alternatives for post-retirement and post-employment benefits.

(4e) Describe current issues faced by governments, employers and employees related to post-retirement and post-employment benefits

Sources:

Morneau Shepell Handbook of Canadian Pension & Benefit Plans, 17th Edition, 2020

- Ch. 24: Post-retirement and Post-employment Benefits

GHVR-650-24: Supplementary Study Note for Canadian Health Actuaries

GHVR-668-16: The New Reality of Retiree Benefits

GHVR-669-16: The End of Retiree Benefits?

Commentary on Question:

Overall, the question was testing the candidates ability to calculate post-retirement liabilities for different groups and the impacts to this with plan changes. Candidates understood the ask and generally did well on this question. Candidates who understood the calculations were given most marks, but docked slight marks if the solution was not correct. For parts (b) and (d), most candidates understood the ask.

Solution:

(a) Calculate the following:

(i) Defined Benefit Obligation (DBO) as of December 31, 20X1

(ii) Current Service Cost for the year 20X2

State any assumptions and show your work.

Commentary on Question:

Overall, this part of the question was well answered, and candidates did well. Some candidates did not get the correct final answer, but that could be due to them not understanding the dates and applying the trend properly to the start of the calculation date.

3. Continued

The model solution for this part is in the Excel spreadsheet.

(b) Describe considerations in making the amendment as it relates to the following employee groups:

(i) New employees

(ii) Employees who are not fully eligible to retire

(iii) Employees who are fully eligible to retire

(iv) Retired employees

Commentary on Question:
Most candidates understood this part of the question and did fairly well.

New employees

- Easiest group to make decisions for is the group of employees who will start working tomorrow.
- These employees have no strong expectations or history of legacy plans.
- Plan sponsor can make decisions based on a balance of needs against competitive pressures.
- Most employers use this group as a benchmark for the organization's long-term plans.

Employees who are not fully eligible to retire

- Sufficient notice can be provided so there are fewer contentious issues associated with the change.
- Employer will develop transition plans for this group.
- Employer needs to deal with communication issues and changes to future promised benefits.

Employees who are fully eligible to retire

- Most challenging group to address.
- Employers often feel a responsibility to maintain benefits for long-service employees.
- Legal issues surrounding notice of change are important to consider.
- Implications for this group also serve as a check for the rationale for a new benefit design.
- If employer is uncomfortable putting an employee with 26 years of service into the plan for new hires, is this the right plan for the organization?

3. Continued

Existing retirees

- Decision making should be straight-forward for this group.
- Organizations need to carefully review their ability to make changes.
- Minor changes to existing benefits structure, such as updating reasonable and customary limits, or annual or lifetime caps, can help modernize the plan when the environment has changed.

(c) Calculate the following:

(i) Past Service Cost as of December 31, 20X1

(ii) Current Service Cost for the year 20X2

(iii) Estimated Defined Benefit Cost for the year 20X2

State any assumptions and show your work.

Commentary on Question:
Candidates did not do as well on part (c) as they did on part (a). The establishment of the Estimated Defined Benefit Cost was challenging, and many did not show expected benefit payments. Some candidates also did not show the PV of payments at retirement, but calculated it in the DBO calculations.

The model solution for this part is in the Excel spreadsheet.

(d) Recommend four alternative cost-containing strategies that XYZ could consider for the impacted groups of employees. Justify your answer.

Commentary on Question:
Candidates did well on this part of the question. Most candidates understood the reason was to lower costs and the implemented strategies.

- Increase existing employee eligibility requirements.
  - For example, retiree benefits could be limited to employees who have completed a minimum number of years of service with the employer, or who were hired before a certain date.
- Modify the current retiree plan design to introduce cost containment features such as:
  - Managed drug formularies
  - Annual or lifetime limits
  - Cost sharing through co-payments or contributions
  - Removing non-essential benefits such as out-of-country coverage

3. Continued

- Replacing traditional benefits with healthcare spending accounts.
- Provide only catastrophic coverage.
    - Focus plan sponsor's funds on elements of greater value in a group purchasing arrangement.
    - For example, true insurance (travel or life insurance) is less expensive to arrange on a group basis. However, routine dental and vision benefits have essentially the same cost to an individual as under a group plan.
- Reviewing and benchmarking design of benefit programs with the goal of looking for cost-savings that can be realized through plan design changes.
- Greater efficiencies in the management of the benefit plan such as carrier consolidations and alternate funding arrangements.
- Re-pricing plan costs, separating retiree experience from active experience to ensure that the retirees' premiums are exclusive of any subsidization from the active employees' plan experience.
- Providing medical and dental coverage through retiree exchanges or marketplaces: under this approach, the employer provides a fixed contribution (similar to an HCSA allocation) but also arranges access to a retiree exchange or marketplace that allows retirees to purchase individual insurance coverage at a discount and generally without providing medical evidence.

4. Learning Objectives:

2. The candidate will understand how to prepare and be able to interpret insurance company financial statements in accordance with IFRS & IAS.

Learning Outcomes:

(2a) Interpret insurer financial statements from the viewpoint of various stakeholders.

(2b) Evaluate key financial performance measures used by life and health insurers for both short and long-term products.

Sources:

Group Insurance, Skwire, 8th Edition, 2021 - Ch. 37: Group Insurance Financial Reporting in Canada

GHVR-693-24: OFSI Guidelines for Life Insurance Capital Adequacy Test (LICAT)

- Chapter 1: Overview and General Requirements (All sections) (pp. 5-14)
- Chapter 2: Available Capital (sections 2.1-2.2) (pp. 15-42)
- Chapter 6: Insurance Risk: (sections 6.1-6.8, excluding 6.7) (pp. 130-149)
- Chapter 11: Aggregation and Diversification of Risk (All sections) (pp. 210-217)

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) (*1 point*) List the risk components that are considered in the determination of XYZ's capital requirements in accordance with the LICAT framework.

Commentary on Question:

Full credit was given to candidates that provided at least 4 of the risks identified below. The description of each risk was not required to get full credit.

- Credit Risk
- Market Risk
- Insurance Risk
- Operational Risk
- Segregated Fund Guarantee

(b) Explain how to determine the required capital for the different insurance risk components involved with each of the following products:

(i) Group Life, including Waiver of Premium

(ii) Group Critical Illness

4. Continued

Commentary on Question:
A successful candidate was able to identify the risks associated with the benefits. Credit was not given for risks that did not apply. Many candidates shared all of the same list of risks twice even if they applied or not indicating that they were not sure which ones applied to each benefit listed.

(i) Group Life including Waiver of Premium

Mortality risk applies to group life insurance

- Level risk (RC_{level})
- Trend risk (RC_{trend})
- Volatility risk (RC_{vol})
- Catastrophe risk(RC_{cat})

$$RC_{mortality} = \sqrt{RC_{vol}^2 + RC_{cat}^2} + RC_{level} + RC_{trend}$$

The insurer should partition its policies into sets with similar products and characteristics and then determine if each individual set is life supported or death supported. Level and trend risk components must be combined for this calculation.

Morbidity risk does apply to Waiver premiums

- Level risk
  - Incidence rate: +25% for active WP
  - Termination rate: -30% for disabled WP
- Trend risk does apply as it provides benefits to disabled lives
  - If a Best Estimate Assumption for morbidity improvement is not used, the risk charge for trend risk is zero.
  - The shock for trend risk is a permanent 100% decrease in the Best Estimate Assumption for morbidity improvement. The shocked cash flows for trend risk are calculated using Best Estimate Cash Flows and an annual morbidity improvement rate assumption of 0%.
  - The morbidity trend risk component is the difference between the present value of the shocked cash flows and the present value of the Best Estimate Cash Flows.
- Volatility risk
  - +25% for group active WP
- Catastrophe risk
  - +25% on incidence rates for group active WP

4. Continued

Expense Risk

- The combined shock is a permanent shock on the Best Estimate Assumptions for expenses including inflation. The shock is an increase of 20% in the first year followed by a permanent increase of 10% in all subsequent policy years. Expense shocks are applied to maintenance expenses. Premium taxes and investment income tax are excluded.
- Required capital for expense risk is the difference between the present value of the shocked cash flows and the present value of Best Estimate Cash Flows.

(ii) Group Critical Illness

Morbidity Risk

- Level Risk
  - Incidence rate: +35% of CI
  - Termination rate: does not apply for CI
- Volatility Risk: +50% for group CI
- Catastrophe risk: +5% on incidence rates for group CI

Expense Risk

- The combined shock is a permanent shock on the Best Estimate Assumptions for expenses including inflation. The shock is an increase of 20% in the first year followed by a permanent increase of 10% in all subsequent policy years. Expense shocks are applied to maintenance expenses. Premium taxes and investment income tax are excluded.
- Required capital for expense risk is the difference between the present value of the shocked cash flows and the present value of Best Estimate Cash Flows.

(c)

(i) Contrast the following:

- Minimum Ratio
- Supervisory Target Ratio

(ii) State the minimum threshold for each of the ratios mentioned in part (i).

(iii) Define the following:

- Total Ratio
- Core Ratio

4. Continued

Commentary on Question:
Almost all candidates were successful in this part of the question and those that did not scored well tended to mix up the Minimum ratio and Supervisory target ratio.

(i)

Minimum Ratio

- Minimum level necessary to cover the risks specified in the LICAT guidelines.

Supervisory target ratio

- Minimum level necessary to cover the risks specified in the guidelines and provide a cushion for other risks.

(ii)

Minimum Ratio

- Total = 90%
- Core = 55%

Supervisory target ratio

- Total = 100%
- Core = 70%

(iii)

Core Ratio

- The Core Ratio focuses on financial strength.
- The formula used to calculate the Core Ratio is:

$$\frac{\text{Tier 1 Capital} + 70\% \text{ of Surplus Allowance} + 70\% \text{ of Eligible Deposits}}{\text{Base Solvency Buffer}}$$

Total Ratio:

- The Total Ratio focuses on policyholder and creditor protection.
- The formula used to calculate the Total Ratio is:

$$\frac{\text{Available Capital} + \text{Surplus Allowance} + \text{Eligible Deposits}}{\text{Base Solvency Buffer}}$$

(d) Calculate the following:

(i) Total Ratio

(ii) Core Ratio

State any assumptions and show your work.

4. Continued

Commentary on Question:
Successful candidates were able to calculate all of the components from the data given to ultimately calculate the Total Ratio and Core Ratio. If candidates made errors, they were carried throughout the calculation and not penalized more than once.
Common challenges encountered were:

- Application of the reduction % to the Policy-by-policy negative reserves in the Tier 1 and Tier 2 capital deduction.
- Application of the rules that do not allow Tier 2 capital to exceed 100% of Tier 1 capital.

The model solution for this part is in the Excel spreadsheet.

(e) Assess the implications of XYZ's capital ratios calculated in (d).

Commentary on Question:
Successful candidates were able to assess their answers from Part D. A candidate was given credit if their assessment of the result from Part D was accurate even if the result from Part D was incorrect.

- OSFI has established a Supervisory Target Total Ratio of 100% and a Supervisory Target Core Ratio of 70%.
- The Total Ratio (103%) exceeds the Target Total Ratio of 100% which is viewed as strong, and no action would be required.
- Insurers are required, at minimum, to maintain a Total Ratio of 90% and a Core Ratio of 55%
- Core ratio (56%) is below supervisory target (70%) but above a minimum requirement (55%). Company will be subject to increased supervision.

(f) Recommend two actions that could be implemented by XYZ to improve their capital ratios calculated in (d). Justify your answer.

Commentary on Question:
Successful candidates were able to recommend two actions based on their answers from Part D. A candidate was given credit if the actions recommended aligned with their result from Part D even if the result from Part D was incorrect. Other answers, other than those provided below, were accepted.

- Obtain more capital
- Cede more business (obtain more reinsurance)
- Accept moving the ceded reinsurance to a registered reinsurer (the question assumes eligible deposits) to provide full capital relief

5. Learning Objectives:

3. The candidate will understand how to evaluate the impact of regulation and taxation on insurance companies and plan sponsors in Canada.

5. The candidate will understand how to describe and evaluate government programs providing health and disability benefits in Canada.

Learning Outcomes:

(3b) Describe the major applicable laws and regulations and evaluate their impact.

(5a) Describe eligibility requirements for social programs in Canada and the benefits provided

(5b) Describe how private group insurance plans work within the framework of social programs in Canada

Sources:

GHVR-653-16: Telus Health Note: How Much Does that Drug Cost?

GHVR-644-22: TACCESS: An Advisor's Guide to Understanding How Taxes Impact Group Insurance Benefits in Canada

GHVR-694-19: Guide to Canada Benefits Legislation

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Describe how prices are set for brand name and generic drugs in Canada.

Commentary on Question:

Overall, candidates generally performed well on this part of the question. In order to receive full marks, details on methodology were necessary, as indicated below.

Brand

- Prices for brand drugs are set by the manufacturer but are regulated by the Patented Medicines Prices Review Board (PMPRB).
- The role of the PMPRB is to ensure that drug prices are not excessive.
- Prices are determined based on the median of seven OECD comparator countries.

5. Continued

Generic

- The PMPRB does not regulate generic prices.
- For the most part, generic prices are set as a percentage of the equivalent brand price, by provincial governments.
- As a result, generic prices can vary across provinces.

(b) Calculate XYZ's current year costs. State any assumptions and show your work.

Commentary on Question:
Candidates were generally able to calculate the claim cost assuming 12 scripts per year. However, in order to get full marks, candidates were required to demonstrate they were able to apply Target Loss Ratio and Retail Sales Tax in addition to the expected claim costs.

The model solution for this part is in the Excel spreadsheet.

(c) Calculate XYZ's projected costs next year if:

(i) A physician prescribes the generic drug

(ii) A physician prescribes the brand name drug and indicates "no substitution"

State any assumptions and show your work.

Commentary on Question:
Candidates were generally able to replicate the methodology from part b), which required properly applying the target loss ratio and the retail sales tax. In order to get full marks, candidates were required to consider impact to costs depending on whether the member turning age 65 opted in or out of RAMQ. Additional consideration on which ingredient cost and dispensing fees were also required as part of this analysis.

The model solution for this part is in the Excel spreadsheet.

(d) Recommend four changes to the plan design that XYZ can consider to reduce plan costs. Justify your answer.

Commentary on Question:
Candidates generally performed well on this part, able to identify ways that a plan sponsor can reduce plan costs. Other reasonable answers and justifications were accepted, other than the four examples provided below.

5. Continued

- Require mandatory generic substitution to minimize costs.
- Reduce coinsurance to encourage employees to become better consumers.
- Require a surcharge and/or premium contributions at age 65 for Quebec that are well in excess of RAMQ's premium requirements in order to incentivize people to not opt-out of RAMQ.
- Review refill guidelines – e.g. maintenance drugs can be a standard 90-day refill – to keep dispensing fees as low as possible. As the drug in question is a maintenance drug, 90 days is reasonable.

6. Learning Objectives:

2. The candidate will understand how to prepare and be able to interpret insurance company financial statements in accordance with IFRS & IAS.

Learning Outcomes:

(2c) Project financial outcomes and recommend strategy to senior management to achieve financial goals.

(2g) Explain fair value accounting principles and describe International Accounting Standards (IAS).

(2h) Construct basic financial statements and associated actuarial entries for a life and health insurance company.

Sources:

IFRS 17 Insurance Contract Examples

Comparison of IFRS 17 to Current CIA Standards of Practice, June 2022 (excluding sections 3.3, 7.2.1, 7.2.2, 7.2.3, 7.2.5 & 8.1.1)

Group Insurance, Skwire, 8th Edition, 2021 - Ch. 37: Group Insurance Financial Reporting in Canada

CIA Educational Note – IFRS 17 Coverage Units for Life and Health Insurance Contracts, Dec 2022 (excluding sections 3.1.2, 3.1.3, 3.2, 3.4)

Commentary on Question:

This question was testing candidates general understanding of IFRS 17 and how to construct financial statements. Most candidates demonstrated a strong understanding of the concept of CSM and how to calculate CSM. However, many candidates fell short in demonstrating an understanding of other components of the IFRS reporting. Part (g), where candidates were asked to apply their knowledge was not done particularly well.

Solution:

(a)

(i) Describe the concept of Contractual Service Margin (CSM).

(ii) Define the three "building blocks" used in the measurement of insurance contract liabilities under the General Measurement Approach (GMA).

(iii) Describe how each "building block" under the GMA compares to the Canadian Asset Liability Method (CALM).

6. Continued

Commentary on Question:
Candidates generally did well in this section. Not all the details in the solution were required for full credit.

(i) The CSM represents the unearned profit from a group of insurance contracts. At contract inception, if the FCF including all cash flows of the contract (i.e., including acquisition expenses and all premiums) is less than zero, the CSM is established to offset that negative amount so there is no front-ending of profit. The CSM is then released into income as insurance contract services are provided.

(ii) Three building blocks:
- The estimated future cash flows laying within the boundary of the contract, based on the "expected value (i.e., the probability-weighted mean) of the full range of possible outcomes" and reflecting "conditions existing at the measurement date" (that is, there is no lock-in of assumptions).
- The impact of discounting for the time value of money.
- Risk adjustment to reflect "the compensation that the entity requires for bearing the uncertainty about the amount and timing of the cash flows".

(iii) General Measurement Approach (GMA) vs CALM:
- Present value of future cash flows: Conceptually, this is similar to the current CIA liability PfADs. Projected cashflows may be different under IFRS17 due to level of aggregation, contract boundary, and the concept of probability weighted cashflows.
- Risk adjustment for non-financial risk: Conceptually, this is similar to current CIA PfADs for non-economic risk. Under IFRS17 there are no asset related MfADs, such as asset default, investment expenses, or reinvestment risk (C3). Diversification of risks may be viewed differently.
- Contractual service margin (CSM): CSM is a new concept versus current CIA standards, which allow front-ending of profit at issue.

(b) Calculate the components of the liability on initial recognition as of January 1, 2023. State any assumptions and show your work.

Commentary on Question:
This part of the question explicitly asked candidates to calculate the components of the liability on initial recognition, not only the CSM. Candidates needed to show their work, and label the initial BEL (PV Premiums, PV Claims, PV Commissions) and PV RA cash flows for full credit.

6. Continued

The model solution for this part is in the Excel spreadsheet.

(c) Construct the CSM Amortization Schedule for years 2023 to 2032. State any assumptions and show your work.

Commentary on Question:
Candidates did generally well on this question and demonstrated they were able to construct the CSM amortization schedule. Full credit was awarded where errors were carried forward from part (b).

The model solution for this part is in the Excel spreadsheet.

(d) Calculate the components of the Insurance Financial Expense for the year 2023. State any assumptions and show your work.

Commentary on Question:
This question asked candidates to calculate the components. Candidates needed to show their work and label each component for full credit. Partial credit was given if the candidate only did a calculation for IFIE

The model solution for this part is in the Excel spreadsheet.

(e) Construct the Statement of Expected Profit or Loss for the year 2023. State any assumptions and show your work.

Commentary on Question:
Most candidates recognized how to calculate Insurance Service Result (Insurance Service Revenue and Insurance Service Expense) but were challenged to complete the other sections of the statement. All components (even those with 0 values) were required to be disclosed in the statement for full credit.

The model solution for this part is in the Excel spreadsheet.

(f) Explain how insurance companies need to segment their insurance contracts according to IFRS 17.

Commentary on Question:
Most candidates did well in recalling this information. Not all the points below were required for full credit.

6. Continued

Under IFRS 17, contracts considered to be similar risk must be managed together. A group of contracts:

- Contain contracts issued in one issue year only.
- Contain contracts that are in a similar product line.

Furthermore, insurer should divide a portfolio of insurance contracts issued into at least the following:

- A group of contracts that are onerous at initial recognition, if any.
- A group of contracts that at initial recognition have no significant possibility of becoming onerous subsequently, if any.
- A group of the remaining contracts in the portfolio, if any.

(g) Recommend portfolios XYZ should include in their 2024 accounting disclosure according to IFRS 17. Justify your response.

Commentary on Question:
Although candidates were able to explain the considerations needed for grouping contracts in part (f), most candidates had difficulties in apply the concepts in this question. Candidates needed to recognize that Company XYZ needed to have different cohort years for business in 2023 and 2024, as well as different cohorts for different lines of business (i.e. life, medical, etc.) A proposed set up of cohorts was required for full credit. Partial credit was not awarded for re-iterating what was mentioned in part (f). Various answers were accepted, as long as the proposal was justified. This level of detail below was not required for full credit.

Company XYZ would need to have at least the following portfolios:

- 2024 Group Term business portfolio. Assuming Company XYZ continues to sell Term life business, the new business will need to be set up in a separate cohort from the existing 2023 cohort.
- Separate portfolios for 2024 Group Term, 2024 Medical & 2024 Drug cohorts. These are distinctly different product lines.
- Furthermore, there is a good chance that the medical and drug business being sold heavily discounted will be onerous at initial recognition. Therefore, the 2024 medical & 2023 drug cohorts will need to be split into an "onerous group" as well as a "no significant possibility of becoming onerous" group. These contracts would need be in its own separate portfolio with a loss component.

6. Continued

- 2023 Group Term business portfolio (established earlier).
- Depending on how long Company XYZ has been in business (we only know the company has been established before Jan 1, 2023), there will likely also be 2022, 2021, 2020, etc. Group Term business portfolio. Each year must be in its own cohort.

7. Learning Objectives:

3. The candidate will understand how to evaluate the impact of regulation and taxation on insurance companies and plan sponsors in Canada.

Learning Outcomes:

(3b) Describe the major applicable laws and regulations and evaluate their impact.

(3c) Understand the impact of the taxation of both insurance companies and the products they provide.

Sources:

GHVR-661-16: Employee Life and Health Trusts & Health and Welfare Trusts

Commentary on Question:

Commentary listed underneath questions component.

Solution:

(a) Explain how an ELHT is more tax efficient than an HWT.

Commentary on Question:

Many candidates did not perform well on this part of the question. Most candidates only briefly explained the difference in the application of deducting taxable vs non-taxable benefits but very few explained/ elaborated on the type of costs that can deducted and the "carry forward" and "carry back" provisions.

- The reason an ELHT is notionally more tax efficient than an HWT is that the HWT is only able to deduct taxable benefits it pays out, whereas an ELHT is able to deduct all benefits, whether taxable or non-taxable in the hands of a beneficiary.
- An ELHT is also able to deduct all costs related to providing eligible benefits, including insurance premiums, claims and administrative costs.
- In computing its income, the ELHT will able to deduct all amounts paid or payable to employee beneficiaries, as well as administrative costs of operating the ELHT including insurance premiums. If the amount so paid in a year exceeds income, the ELHT will be entitled to "carry forward" any unused portion of the deduction.
- Notably the "carry forward" and "carry back" provisions applicable to an ELHT for non-capital losses do not apply to an HWT (the "carry forward" rule applies only for three years).
- An employer contribution to an HWT can be deducted in the year in which there is a legal obligation to make payment to the extent that the contribution is reasonable in the circumstance. Many employers may thus prefer an HWT, so that they can obtain a deduction. Where employer contributions are not deducted in the year, they can normally be deducted in a subsequent year where the trust uses those contributions to provide for benefits in that subsequent year.

7. Continued

(b) Compare and contrast other characteristics of an HWT and ELHT.

Commentary on Question:
No marks were awarded to candidates for repeated solution in part (a). Successful candidates were able to explain the differences between HWT and ELHT. Most candidates did not distinguish the presence of the "qualified multi-employer" rules under ELHT.

- Compare:
  - Restricted to providing group sickness or accident insurance, private health services and group life insurance to employees.
  - The purpose of the trust must be limited to providing the permissible benefits describe in the above point.
  - Cannot be controlled by the funding plan sponsors.
  - Cannot make direct investments in the plan sponsor.
  - Subject to tax as a trust (e.g. at the highest marginal rate) on its investment income.

- Contrast:
  - ELHT is subject to the "key employee" concept, which is a high-income employee or those that hold significant shareholdings. Benefits cannot accrue more favorably to such employees than to other employees. Additionally, at least once class of beneficiaries of an ELHT must contain more than 25% of all employees and at least 75% of that class must not be a key employee.
  - Another distinguishing feature of ELHTs is the presence of the "qualified multi-employer" rules. While multiple employers can participate in the same HWT, the "qualified multi-employer" rules allow an ELHT with at least 15 employers under a collective bargaining agreement to, provided certain technical conditions are met, be able to claim a full current year deduction for all contributions made.

(c) Revise ABC's tax returns for 2021 to 2023 reflecting the results of the internal audit. State any assumptions and show your work.

Commentary on Question:
Some candidates were not able to attempt this part. For those who attempted, candidates were able to calculate the current year deductions. To obtain full marks, the carry forward deductions must be calculated correctly.

The model solution for this part is in the Excel spreadsheet.

7. Continued

(d) Construct the projected tax return for 2024. State any assumptions and show your work.

Commentary on Question:
Candidates did either very well or not at all on this part of this question. Successful candidates were able to include all given assumptions in the calculations. Most candidates either missed including the plan costs reduction % or carry forward losses in calculation.

The model solution for this part is in the Excel spreadsheet.