

GH FVCC Model Solutions

Fall 2020

1. Learning Objectives:

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

Learning Outcomes:

- (6a) Describe why employers offer post-retirement and post-employment benefit.
- (6b) Determine appropriate baseline assumptions for benefits and population.
- (6c) 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.
- (6d) Describe funding alternatives for post-retirement and post-employment benefits.
- (6f) Apply actuarial standards of practice to post-retirement and post-employment benefit plans.

Sources:

Morneau Shepell Handbook of Canadian Pension & Benefit Plans, 16th Edition, 2016, Ch. 24: Post-retirement and Post-employment Benefits

GHFV-633-20: CIA Standards of Practice - Practice-Specific Standards for Post-Employment Benefit Plans

GHFV-650-15: Supplement Calculation Note for IAS 19

Commentary on Question:

Candidates did very well or very poorly depending largely on their knowledge of post-retirement benefits and how to account for the cost under IAS 19.

Solution:

- (a) Describe reasons for employers to continue to provide retiree benefits.

Commentary on Question:

With most employers opting to cut retiree benefits, this question focused on why employers would choose to go against the norm. Good candidate responses showed this understanding that offering these benefits was indeed against the norm.

1. Continued

Paternalism — The employer may accept an obligation to take care of, or to reward, long-service employees.

Extension of active employee benefits — Retiree benefits may be considered a natural extension of the active employee benefits.

Competitiveness — Retiree benefits may help employers to attract and retain employees, particularly employees with longer experience.

Negotiation — Retiree benefits are often part of a union negotiated package.

Employee Entitlement/Employer Precedent — The providing of post-retirement or post-employment benefits may be influenced by both the employees' expectations of having such a benefit in place and the expectations that such benefit entitlements will continue in the future. The employer may also continue the coverage simply because they have always done so.

- (b) Describe the considerations that should be made in accordance with *CIA Standards of Practice - Practice-Specific Standards for Post- Employment Benefit Plans* when providing funding advice.

Commentary on Question:

Candidates struggled with this part of the question as funding in Canada is not common. Although not explicitly stated in the solution, candidates were given credit for displaying knowledge of various funding vehicles in Canada as this is part of providing funding advice.

If the actuary is providing advice with respect to the funding and/or funded status of a post-employment benefit plan that is pre-funded in some manner, the actuary should select either best estimate assumptions or best estimate assumptions modified to incorporate margins for adverse deviations to the extent, if any, required by the terms of an appropriate engagement.

Advice on funding or funded status may include:

- Advice regarding the amount of assets to be earmarked, whether or not segregated, to cover post-employment benefit commitments;
- Advice regarding a systematic method of accumulating funds to provide the post-employment benefit commitments; or
- Advice on the funding implications of a plan amendment.

The terms of an appropriate engagement may specify applicable objectives of funding, which may include a formal or informal funding policy.

Objectives of funding specified by the terms of an appropriate engagement may include considerations such as the security of benefits and related provisions for adverse deviations, the allocation of contributions among time periods, and/or inter-generational equity.

Depending on the circumstances affecting the work, the actuary's advice on funding may describe a range of contributions.

1. Continued

- (c) Explain funding alternatives for the retiree life benefit.

Commentary on Question:

Although not on the syllabus, candidates were given credit for knowing that health and welfare trusts (HWTs) were being discontinued in favor of employee life and health trusts (ELHTs).

Purchase one-year renewable group term insurance

Simplest and most common funding method.

In some cases, the active and retiree benefit experience is combined into one policy and a blended rate is charged.

Alternatively, the retiree and active rates are separate, reflecting the experience and demographics of each group.

Considering that employer contributions to life insurance coverage is a taxable benefit, having a separate retiree rate will significantly increase the taxable benefit to retirees while reducing the actives' taxable benefit.

Self-insure the first \$10,000

Employer can pay a member's beneficiary up to \$10,000 without it being taxable income in the beneficiary hands.

Because death benefits in excess of \$10,000 are considered taxable income to the recipient if paid by the employer, life insurance above \$10,000 tends to be insured.

Pre-fund the cost of retiree benefits

The retiree life insurance can be purchased from an insurance company on a single premium, paid-up basis.

The advantage of this method is that the obligation relating to the life insurance benefit can be settled at the time of retirement.

The main disadvantage is the relatively expensive price, since group insurance companies maintain margins for adverse deviations when quoting paid-up premiums.

The end result is usually a paid-up premium that is significantly higher than the actuarial obligation that the employer would otherwise have on the books.

Another disadvantage is the large taxable benefit that the retiree will face in the year of purchase (except in Quebec).

- (d) Calculate the following at December 31, 2020:
- (i) DBO if the retiree life benefit is not added.
 - (ii) DBO if the retiree life benefit is added at this date.
 - (iii) Portion of defined benefit cost reflected in profit or loss if the retiree life benefit is added at this date.

1. Continued

Calculate the disability income Employee A will receive from each source, and in total, in 2020 and 2021. State any assumptions and show your work.

Commentary on Question:

Candidates either did very well or very poorly depending on their accounting knowledge.

(i) **Calculate the following at December 31, 2020:**

$$\text{DBO} + \text{CSC} - \text{BP} + \text{Interest} = \text{DBO}$$

$$\$3,187,000 + \$87,000 - \text{BP} + \text{Interest} + \$129,000 = \$3,447,000$$

$$\text{Interest} = \$44,000 + \text{BP}$$

$$\$3,187,000 \times 0.035 + \$87,000 \times 0.035 - \text{BP}/2 \times 0.035 = \$44,000 + \text{BP}$$

$$\$3,187,000 \times 0.035 + \$87,000 \times 0.035 - \$44,000 = \text{BP} + \text{BP}/2 \times 0.035$$

$$1.0175\text{BP} = \$70,590$$

$$\text{BP} = \$69,376$$

$$\text{DBO} + \text{CSC} - \text{BP} + \text{Interest} + \text{Actuarial loss} = \text{DBO}$$

$$\text{Interest} = (\$3,447,000 + \$87,000 \times 1.04 - \$69,376/2) \times 0.035 = \$122,598$$

$$\text{DBO without Life} = \$3,447,000 + \$87,000 \times 1.04 - \$69,376 + \$122,598 + \$50,000 = \$3,640,702$$

(ii) **DBO with Life** = $\$3,640,702 + 118,000 = \$3,758,702$

(iii) **Defined benefit cost**

$$= \text{Service cost} + \text{interest} + \text{past service cost}$$

$$= \$87,000 \times 1.04 + \$122,598 + \$118,000$$

$$= \$331,078$$

- (e) Recommend whether or not Gym-N-Juice should offer a flat \$10,000 life benefit to its retirees. Justify your answer.

Commentary on Question:

Candidates generally did well in coming up with a recommendation and the basis behind it.

- Justification to offer flat \$10,000:
 - The \$118,000 obligation is immaterial to the overall obligation and can be perceived as a significant improvement in benefits to the retirees.
 - Employer can pay a member's beneficiary up to \$10,000 without it being taxable income in the beneficiary hands.
 - If aligned with company's overall philosophy (e.g. paternalism, competitiveness, etc.).

1. Continued

- Justification not to offer \$10,000:
 - If not aligned with company's overall philosophy (e.g. keeping cost low).
 - Shouldn't be enhancing benefits as it will be harder to eliminate in the future.

2. Learning Objectives:

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

Learning Outcomes:

- (4c) Project financial outcomes and recommend strategy to senior management to achieve financial goals.
- (4e) Compare key differences and similarities in measures by accounting basis.
- (4g) Explain fair value accounting principles and describe International Accounting Standards (IAS).
- (4h) Construct basic financial statements and associated actuarial entries for a life and health insurance company.

Sources:

GHFV-698-19: CIA Draft Educational Note – Comparison of IFRS 17 to Current CIA Standards of Practice, Sep 2018 (excluding 3.3, 7.3.1, 7.3.3 & 8.1.1)

GHFV-703-20: CIA Draft Educational Note – Application of IFRS 17 Insurance Contracts (Ch. 5: Level of Aggregation)

GHFV-704-20: CIA Draft Educational Note – IFRS 17 Coverage Units for Life and Health Insurance Contracts (excluding sections 3.1.2, 3.1.3, 3.2, 3.4)

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Briefly describe the three "building blocks" under IFRS 17 to measure insurance contract liabilities.

Commentary on Question:

Candidates generally had issues identifying the 3 building blocks.

- **Present value of future cash flows (i.e. best estimated cash flows)**
 - This is similar to the current CIA liability without PfADs, although there are several important differences.
- **Risk adjustment for non-financial risk**
 - This is similar to current CIA PfADs for non-economic risk.
 - The sum of the present value of future cash flows and the risk adjustment for non-financial risk is called the fulfilment cash flows (FCF).

2. Continued

- **Contractual Service Margin**

- The CSM represents unearned profit from a group of insurance contracts.
- At the inception of the contract, if the future cash flows is less than zero, the CSM is established to offset negative amounts to prevent front-ending of profits. CSM is then released into income once the services are provided.

- (b) List considerations for using provisions for adverse deviations (PfADs) to determine the risk adjustment for non-financial risk.

Commentary on Question:

Candidates generally were not able to list considerations.

- Is the current level of PfAD consistent with the compensation the entity requires for bearing uncertainty?
- Are the diversification benefits included in current PfADs consistent with those that would be reflected in IFRS 17?
- How would the confidence level (to satisfy disclosure requirement of IFRS 17.B92) inherent in the current PfADs be determined?
- IFRS 17 requires reinsurance contracts held to be measured as separate contracts. How would the PfAD appropriate to the net liability be split between the direct and ceded contracts?
- Are any adjustments needed for pass-through features?

- (c) Compare how the discount rate is determined under the Canadian Asset Liability Method (CALM) versus IFRS 17.

Commentary on Question:

Candidates were able to generally describe the method of discount rate determination for both CALM and IFRS 17.

- **CALM**

- CALM sets the value of the insurance contract liabilities equal to the current statement value of supporting assets required to satisfy the obligations, taking into account reinvestment/ disinvestment.
- While CALM does not result in explicit discount rates, it is common practice to solve for an equivalent discount rate that when applied to the insurance contract liability cash flows will give the same liability.

2. Continued

- **IFRS 17**
 - The discount rates do not depend on the assets used to support the liabilities (e.g., investment expenses are ignored) and there are no reinvestment/disinvestment assumptions.
 - Instead, under IFRS 17, discount rates for cash flows that are fixed (i.e., that do not vary with returns on underlying items) are based on a liquidity-adjusted risk-free discount rate curve.
 - The discount rate curve is set to reflect the characteristics of the liability cash flows (i.e., liquidity, currency, timing) only.

- (d) List and describe the approaches to develop the discount rate curve under IFRS 17.

Commentary on Question:

Candidates were typically able to identify the methods, but descriptions were unsatisfactory

- **Bottom-up Approach:**
 - A risk-free discount curve is adjusted by adding an illiquidity premium to reflect the characteristics of the insurance contract liabilities.
 - For cash flows denominated in Canadian dollars, the risk-free curve under CALM uses the first 20 years of the current risk-free curve in the Canadian market (which is usually a government bond curve).
 - This same approach could be used for IFRS 17 if 20 years is considered the longest duration for which there is a reliable yield.
 - The CALM method for extending the risk-free yield curve beyond the first 20 years prescribes a URR and a method for interpolating between the 20-year term and the URR.
 - This approach might be used as a reference point for how to extend the risk-free curve beyond the observable period for IFRS 17.

- **Top-down Approach:**
 - A reference portfolio of assets is selected with characteristics that are similar to those of the insurance contract liability.
 - The current yields on the reference assets are then adjusted to remove any characteristics of the asset(s) that are not relevant to the liability (i.e. credit risk and market risk).
 - The yield on the reference portfolio would be adjusted to account for differences in liquidity characteristics between the reference portfolio and the insurance contract liabilities.

2. Continued

- (e) Describe the decision process in determining the level of aggregation when valuing insurance contracts under IFRS 17.

Commentary on Question:

Candidates were unable to outline the full set of considerations for aggregation

- Begin with individual insurance contracts.
 - Determine if contracts are managed together, or if they are subject to similar risks.
 - Once determined, they will be grouped in separate portfolios.
 - Contracts that fall into a group due to constraints on profitability due to law/regulation, these contracts may be grouped together.
 - Determine if the contract is subject to the premium allocation approach or general measurement/variable fee approach.
 - Split contracts into the PAA or GMA/VFA.
 - For PAA grouping, we can assume that the contracts are not onerous.
 - Assess likelihood of future changes in facts and circumstances.
 - One grouping for not onerous/possibly onerous.
 - One grouping for not onerous, no significant possibility to be onerous.
 - Facts and circumstances indicate that the contracts are onerous.
 - Another grouping for onerous.
 - For GMA/VFA, we need to measure if the contracts are onerous.
 - Assess likelihood of changes in assumptions resulting in onerous.
 - One grouping for not onerous/possibly onerous.
 - One grouping for not onerous, no significant possibility to be onerous.
 - Another grouping for onerous.
 - Groups should comprise contracts incepting no longer than 12 months apart.
 - Once identified, split contracts into final groupings.
- (f) Calculate the amortized amount of the CSM for each quarter under the following approaches:
- (i) (2 points) Simple sum of the various contractual coverages
 - (ii) (2 points) Normalization of the coverage units based on expected premiums

State any assumptions and show your work.

Commentary on Question:

Candidates were unable to replicate the calculations.

2. Continued

(i)

Period	1	2	3	4
Quantity of Benefits	703,500	703,500	703,500	703,500
Probability of Survival (tpx)	100%	95%	90%	86%
(A) Current service (CUt)	703,500	668,325	634,909	603,163
(B) Current + future service	2,912,069	2,208,569	1,540,244	905,335
CSM amortization factor [(A)/(B)]	24.2%	30.3%	41.2%	66.6%
Opening CSM	225,000	170,644	119,006	69,950
Insurance finance expense	0	0	0	0
CSM amortized	54,356	51,638	49,056	46,603
Ending CSM	170,644	119,006	69,950	23,347

Period	5	6	7	8
Quantity of Benefits	100,000	100,000	100,000	100,000
Probability of Survival (tpx)	81%	77%	74%	70%
(A) Current service (CUt)	81,451	77,378	73,509	69,834
(B) Current + future service	302,172	220,721	143,343	69,834
CSM amortization factor [(A)/(B)]	27.0%	35.1%	51.3%	100.0%
Opening CSM	23,347	17,054	11,075	5,396
Insurance finance expense	0	0	0	0
CSM amortized	6,293	5,979	5,680	5,396
Ending CSM	17,054	11,075	5,396	0

- Quantity of Benefits = Total Maximum Coverage of Contract #1 + Total Maximum Coverage of Contract #2
- $tpx = \text{prior } tpx * (1 - \text{lapse})$
- $CUt = \text{Quantity of Benefits} * tpx$
- $CSM \text{ amortized} = CSM \text{ Amortization factor} * \text{Opening CSM}$
- $\text{Ending CSM} = \text{Opening CSM} - CSM \text{ amortized}$

2. Continued

(ii)

Period	1	2	3	4
Quantity of Benefits	1,175,000	1,175,000	1,175,000	1,175,000
Probability of Survival (tpx)	100%	95%	90%	86%
(A) Current service (CUt)	1,175,000	1,175,000	1,175,000	1,175,000
(B) Current + future service	8,700,000	7,525,000	6,350,000	5,175,000
CSM amortization factor [(A)/(B)]	13.5%	15.6%	18.5%	22.7%
Opening CSM	225,000	194,612	164,224	133,836
Insurance finance expense	0	0	0	0
CSM amortized	30,388	30,388	30,388	30,388
Ending CSM	194,612	164,224	133,836	103,448

Period	5	6	7	8
Quantity of Benefits	1,000,000	1,000,000	1,000,000	1,000,000
Probability of Survival (tpx)	81%	77%	74%	70%
(A) Current service (CUt)	1,000,000	1,000,000	1,000,000	1,000,000
(B) Current + future service	4,000,000	3,000,000	2,000,000	1,000,000
CSM amortization factor [(A)/(B)]	25.0%	33.3%	50.0%	100.0%
Opening CSM	103,448	77,586	51,724	25,862
Insurance finance expense	0	0	0	0
CSM amortized	25,862	25,862	25,862	25,862
Ending CSM	77,586	51,724	25,862	0

- Quantity of Benefits = Total Expected Premiums of Contract #1 + Total Expected Premiums of Contract #2
- $tpx = \text{prior } tpx * (1 - \text{lapse})$
- $CUt = \text{Quantity of Benefits}$
- $\text{CSM amortized} = \text{CSM Amortization factor} * \text{Opening CSM}$
- $\text{Ending CSM} = \text{Opening CSM} - \text{CSM amortized}$

- (g) Recommend which one of the two approaches listed in part (f) produces the best proxy for the aggregate quantity of services provided. Justify your answer.

Commentary on Question:

Candidates were generally unable to explain which of the 2 approaches were the best as a proxy.

2. Continued

- The Normalization of the coverages units based on expected premiums approach produces a better representation of the services being provided under this group of contract.
 - The exposures for each of the coverages are not easily comparable. It is difficult to compare the respective exposures of dental coverage and life coverage under a group insurance contract. Under the simple sum of the various contractual coverages approach, the CSM is amortized quickly over the first four quarters, driven by the first contract where the annual premium is lower, while the contract with a longer guarantee period has a higher annual premium.
- (h) Propose another proxy for coverage units for this group of contracts. Justify your answer.

Commentary on Question:

Candidates were generally able to provide an adequate alternative.

- The number of certificates would also be a good proxy for coverage units for group insurance, provided that the volume of coverage does not vary substantially between certificates.
- Where the use of premiums for normalization would not be appropriate, a more sophisticated normalization approach may be appropriate, such as calculation of a notional CSM for each coverage. A notional CSM approach would essentially amortize a CSM calculated for each coverage as if it was a separate contract, but the aggregate CSM for a group of contracts would be the sum of the notional CSMs for the underlying coverages in the contract.

3. Learning Objectives:

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

Learning Outcomes:

- (5b) Describe the major applicable laws and regulations and evaluate their impact.

Sources:

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

Commentary on Question:

Successful candidates were able to understand the study note. Successful candidates were able to recall key features of ELHTs and then explain how they relate to different cohorts of employees. Ultimately successful students were able to translate the rules into calculations and results.

Solution:

- (a) Describe the key features of ELHTs.

Commentary on Question:

Successful candidates were able to not only list the key feature of Employee Life and Health Trusts, but to describe them as well.

- The trust must be resident in Canada.
- The trust must be organized for the purpose of providing the limited forms of benefits and assistance – group sickness or accident insurance, a group term life insurance policy or a private health services plan.
- The trust has a legal right to enforce payment of contributions to the trust.
- Employer agents or representatives constitute only a minority of the trustees of the trust.

- (b) Explain ELHT's requirements as it relates to "key employees".

Commentary on Question:

Successful candidates were able to explain ELHT requirements as they relate to key employees. It was important for candidates to make the distinction of a key employee to provide an accurate explanation.

- ELHT's have an anti-avoidance concept of a key employee.
- Defined as a high-income employee of one which holds significant shareholdings.
- Benefits cannot accrue more favorably to key employees.
- At least one class of beneficiaries must contain more than 25% of all employees, and at least 75% of this class must not be a key employee.

3. Continued

- (c) Calculate the contribution required from:
- (i) Outdoor employers
 - (ii) Indoor employers

State any assumptions and show your work.

Commentary on Question:

Successful candidates were able to demonstrate that they could understand three key calculations and then repeat them for each of the 4 years. The three calculations were trending, aging and the present value. The calculations were similar for both the Outdoor and Indoor employers.

Successful candidates made the following assumption to calculate the contribution correctly for both the indoor and outdoor employers:

- Annual benefit payments occur mid-year (i.e. assume uniform distribution of claims). This assumption is critical to calculate the present value correctly.

Successful candidates were able to calculate the following correctly:

1. Trending

- Trending starts at 6.5% and then decreases by 0.125% each year thereafter, so as an example:
- **Year 2022:** $1.0000 \times 1.0650 \times 1.06375 = 1.1329$

2. Aging

- **Year 2020 (Indoor):**
Aging Factor $(\text{Average Age} - 55) = 1.02^{(59.1 - 55)} = 1.0846$
- **Year 2020 (Outdoor):**
Aging Factor $(\text{Average Age} - 55) = 1.02^{(63.1 - 55)} = 1.174$
- This calculation is repeated for years 2021 – 2023 using the average age for each year.

3. Present value

- Successful candidates calculated the Total Costs prior to calculating the present value.
- **Total Costs = Total Claims Cost x Count x Trend x Aging**
- Then the present value was calculated as:
- $$\text{Present Value} = \frac{\text{Total Costs}}{(1 + \text{Discount Rate})^{\text{time}}}$$
- For 2020 (Indoor):

3. Continued

- $Present\ Value = \frac{857,359}{(1+0.025)^{0.5}}$ or \$846,839

4. The sum of the present value from 2020 through 2023 represented the total contribution for the employer.

Year	Base		Trend	Aging	Total Costs	Present Value	
	Claims Cost	Count					
2020	\$1,500	527	1.0000	1.0846	\$857,359	\$846,839	--> discount to 1/1/2020
2021	\$1,500	586	1.0650	1.0803	\$1,011,298	\$974,526	--> discount to 1/1/2020
2022	\$1,500	592	1.1329	1.0889	\$1,095,426	\$1,029,848	--> discount to 1/1/2020
2023	\$1,500	608	1.2037	1.0997	\$1,207,240	\$1,107,287	--> discount to 1/1/2020
						\$3,958,500	

Part (ii): Calculate contribution for outdoor employers:

Year	Base		Trend	Aging	Total Costs	Present Value	
	Claims Cost	Count					
2020	\$900	105	1.0000	1.1740	\$110,941	\$109,580	--> discount to 1/1/2020
2021	\$900	106	1.0650	1.1693	\$118,806	\$114,486	--> discount to 1/1/2020
2022	\$900	112	1.1329	1.1670	\$133,270	\$125,291	--> discount to 1/1/2020
2023	\$900	114	1.2037	1.1647	\$143,842	\$131,933	--> discount to 1/1/2020
						\$481,291	

(d) Calculate the 2020 tax return refund the employers would receive under the following scenarios:

- (i) All employers participate in the ELHT
- (ii) Only the outdoor employers participate in the ELHT

State any assumptions and show your work.

Commentary on Question:

Successful candidates were required to identify if the multi-employer trust rules applied or not. The ability to recognize the differences allowed the candidate to apply the correct percentage to the result in C.

- (i) **Successful candidates were able to recognize that if all employers participate, then multi-employer rules apply (since min. 15 employers reached).**
 - Under multi-employer trusts, employers can deduct the full value of the contribution.

3. Continued

- Refund would be 40% of the total indoor and outdoor contributions calculated in part c in 2020.

$$= 40\% \times (846,839 + 109,580) = \$382,568$$

(ii) **In this case, the multi-employer rules would NOT apply**

- The employer deduction is limited to the benefits paid out that year.
- The refund would be 40% of the 2020 costs, calculated in c, for outdoor employers only.

$$= 40\% \times (109,580) = \$54,790$$

- (e) Calculate the expected asset balance at the end of 2021. State any assumptions and show your work.

Commentary on Question:

Successful candidates understood that the starting point for the answer was the sum of the Indoor and Outdoor Employer contributions from C. Once a student understood where to start, they would apply the rules in the study note to the individual components to calculate the balances and carry forward amounts.

3. Continued

Line Item	Amount	Comments
Trust balance at 1/1/2020:	\$ 4,439,790	--> from c (indoor & outdoor) employer contributions
2020 claims costs:	\$ 484,150	--> from c, multiplied by 50%
2020 trust income:	\$ -	--> no income for trust
Amount subject to tax:	\$ -	--> Since there is no income for the trust it is not subject to tax
Taxes owed:	\$ -	--> taxes are owed are at the highest marginal tax rate per the study note, given as 50% in the stem
2020 carry-forward deduction:	\$ (484,150)	--> candidate will need to recognize unused deductions can be carried forward
Trust balance at 1/1/2021:	\$ 3,955,640	--> prior balance, less benefit costs, plus income, less taxes
2021 claims costs:	\$ 1,017,094	--> from c, multiplied by 90%
2021 trust income:	\$ 1,551,192	--> big return for trust, well in excess of costs
Amount subject to tax, net of any carry forwards:	\$ 49,948	--> the net income is offset against the carry-forward from the prior year; if candidate gives no consideration to the carry-forward
Taxes owed:	\$ 24,974	--> taxes are owed are at the highest marginal tax rate per the study note, given as 50% in the stem
Trust balance at 1/1/2022:	\$ 4,464,765	--> prior balance, less benefit costs, plus income, less taxes

4. Learning Objectives:

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

Learning Outcomes:

- (3a) Describe eligibility requirements for social programs in Canada and the benefits provided.
- (3b) Describe how private group insurance plans work within the framework of social programs in Canada.

Sources:

GHFV-694-19: Guide to Canada Benefits Legislation, 2018, sections 4, 5, 6, 7.1, 7.2, 7.2.1, 7.2.5 & 7.2.6)

Morneau Shepell Handbook of Canadian Pension Benefit Plans, 16th Edition, 2016

- Ch. 2: Government Pension Programs
- Ch. 19: Employment Insurance.

Commentary on Question:

The question tested candidates' ability to recall the eligibility requirements for social programs in Canada including the benefits provided. Candidates were also tested on the function of private group insurance plans within the framework of social programs in Canada.

Solution:

- (a) List the eligibility criteria for:
 - (i) Old Age Security (OAS)
 - (ii) Guaranteed Income Supplement (GIS)

Commentary on Question:

- *Candidates had difficulty recalling more specific eligibility requirements and made general comments such as "low income"*

Old Age Security (OAS)

- Lived in Canada for at least 40 years after turning 18; or
- Reached the age of 25 on or before July 1, 1977, and at that time:
 - Lived in Canada (or had lived in Canada before that date, but after age 18), and
 - Lived in Canada for the 10 years immediately before the approval of your OAS application.

4. Continued

- In order to qualify for a partial pension, which is equal to 1/40th of the full pension for each complete year of residence after age 18, the following conditions must be met:
 - You lived in Canada for a minimum of 10 years after reaching age 18; and
 - You live in Canada when you receive your OAS pension.

Guaranteed Income Supplement (GIS)

- Any low-income person who receives the Old Age Security pension and meets certain residency criteria is eligible for the GIS.
 - Single persons Vs. Married couples both OAS pensioners Vs. OAS pensioner whose spouse is not receiving OAS
- (b) Describe the general provisions included in Canadian/Quebec Pension Program (C/QPP).

Commentary on Question:

Many candidates referenced specific benefit provisions of the C/QPP programs as opposed to the general provisions.

- Indexing of Benefits
 - Indexation of benefits before retirement is based on a wage index through the indexation of the YMPE, whereas after retirement the indexation is based on the CPI.
- Income Tax
 - CPP/QPP benefits are taxable income to the beneficiary.
 - Contributions by employers are fully tax deductible, while employees receive a tax credit.
- Credit Splitting
 - When a marriage or common-law relationship ends, the CPP credits built up by a couple while they lived together can be divided equally between them.
- Assignment
 - A retirement pension in payment may be divided between the two spouses or common-law partners in proportion to the period of cohabitation, provided that both spouses or common-law partners are at least age 60 and have ceased contributing to the CPP/QPP.
 - On death, divorce, separation (after 12 months), or request of both spouses or common-law partners, the assignment will come to an end and the amount of the pension will revert to the same amount as if there had been no pension sharing.

4. Continued

- Reciprocal Agreements with Other Countries
 - The federal government and the Quebec government have reciprocal social security agreements with various countries to help people qualify for benefits from either country (i.e., eligible service under the foreign plan may be taken into account to qualify for the CPP/QPP benefits).
- Integration with CPP/QPP Benefits
 - Other private or public arrangements may reduce benefits to take into account the benefits payable from the CPP/QPP.
 - Many private pension plans may also integrate their benefit level with CPP/QPP.

- (c) List the acceptable arrangements for returning 5/12 of the premium reduction to employees.

Commentary on Question:

Candidates generally recalled that the return of premium reduction could be in the form of enhanced benefits, but did not provide other acceptable arrangements.

- A written mutual agreement on how the savings will be returned to the employees.
- A cash rebate equal to 5/12 of the savings divided amongst the employees, which is treated as employment income subject to source deductions.
- Providing new or increased benefits, including upgrading existing benefits, or providing more holidays or time off work.

- (d) Define the minimum requirements to qualify for the EI premium reduction.

Commentary on Question:

Candidates generally recalled the first payer and waiting period minimums, but did not typically expand beyond these requirements.

- Disability benefits that are at least equal to the EI sickness benefits (i.e., 55% of insurable earnings).
- Payment of benefits starting on or before the 15th day of disability (or 8th day starting in 2017).
- In the case of weekly indemnity plans, payment of benefits for at least 15 weeks for each disability occurrence.
- Eligibility to claim benefits within three months of continuous employment.
- 24-hour coverage.
- Designation of the plan as the first payer (preventing plan benefits from being integrated and/or coordinated with EI benefits).

4. Continued

- In the case of weekly indemnity plans, reinstatement of full disability coverage after a disability within one month of return to work for future disabilities not related to the initial disability cause, and within three months of return to work for a recurrence of the initial disability cause.

(e) Calculate the weekly CCB amounts for John and Diana under:

- (iii) EI program
- (iv) Employer plan

State any assumptions and show your work.

Commentary on Question:

Candidates generally performed well in the calculation. Some were unable to locate the EI Maximum Yearly Insurable Earnings information provided in the case study or to recall the EI benefit percentage.

	John	Diana
STD Weekly Income Benefit	504.81	1,000.00
EI Weekly Income Benefit	370.19	573.27
CCB from EI	370.19	573.27
CCB from ER plan	134.62	426.73

(f) Evaluate whether or not the short-term disability (STD) plan and the CCB plan of Another Day qualify under the EI premium reduction program. Justify your answer.

Commentary on Question:

Candidates were typically only able to successfully comment on the qualification for EI premium reduction for one of the STD or CCB plans.

- STD
 - Yes, the STD plan of Another Day qualifies under the EI premium reduction program since the STD plan is deemed to be the “first payer” and EI is deemed to be the “second payer” of disability benefits. Any payment received from a short-term disability plan reduces the EI benefit paid for the same week.
 - In addition, the STD plan of Another Day provides disability benefits that are at least equal to the EI benefits in terms of benefit amount, duration, and contract provisions.

4. Continued

- CCB
 - No, the CCB plan of Another Day does not qualify under the EI premium reduction program since EI is deemed to be the “first payer” and Another Day is deemed to be the “second payer” of CCB benefits.

5. Learning Objectives:

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

Learning Outcomes:

- (4a) Interpret insurer financial statements from the viewpoint of various stakeholders.
- (4b) Evaluate key financial performance measures used by life and health insurers for both short and long-term products.
- (4c) Project financial outcomes and recommend strategy to senior management to achieve financial goals.
- (4d) Describe the planning process of a life and health insurance company (strategic, operational, and budgeting).
- (4h) Construct basic financial statements and associated actuarial entries for a life and health insurance company.

Sources:

GHFV-683-17: CIA Educational Note Dynamic Capital Adequacy Testing

Commentary on Question:

Successful candidates were able to recall the CIA DCAT Study note in detail by recalling details from the study note and being able to opine and critique scenarios described within the question.

Solution:

- (a) List considerations when selecting a materiality standard.

Commentary on Question:

Successful candidates were able to recall the considerations from the CIA study note on Page 8.

- The size of the company.
- The financial position of the company.
 - The standard of materiality would become more rigorous in examining a base scenario where capital adequacy.
- The nature of the regulatory test.
 - For example, if the regulatory test is measuring required capital, the materiality standard might be expressed as a percentage of the required capital.
- The standard of materiality would usually be less rigorous than that used for valuation of the insurer's policy liabilities.

5. Continued

- (b) Your actuarial team has proposed the following approach for the DCAT at year end 2019:
- Step 1: Review the financial statements of financial years 2018 and 2019.
 - Step 2: Use the business plan developed for financial years 2020 and 2021 as the DCAT base scenario.
 - Step 3: Create 2 adverse scenarios to address management's concerns:
 - Scenario 1: all assumptions are the same as the base scenario, except that the prescription drug cost trend increases to 10% in 2020 and 15% in 2021.
 - Scenario 2: all assumptions are the same as the base scenario, except that the dental cost trend increases to 8% in 2020 and 2021.

Critique the proposed approach.

Commentary on Question:

Successful candidates were able to critique the proposal by identifying gaps in the approach along with making recommendations for improvements in the proposal.

- Review of operations for the recent years (normally at least 3 years).
 - Recommended changes to Step 1: extend review to include 2017 financial year.
- Development and modelling of the base scenario for the forecast period would normally be consistent with the insurer's business plan.
 - Recommended changes to step 2: the projection period should be minimum 3 years.
- Selection of at least 3 scenarios showing the greatest surplus sensitivity for inclusion in the DCAT report.
 - Recommended changes: need to include at least 3 adverse scenarios.
- Assessment of the risk categories and identification of those that are relevant to the insurer's circumstances.
 - Recommended changes: the proposed DCAT plan should include sensitivity tests to identify risk categories.
- The DCAT plan should identify:
 - Possible corrective management actions and the impact of these on the insurer's financial condition for each scenario included in the report.
 - Possible regulatory actions for each scenario that causes the insurer to fall below the supervisory target capital requirement.

5. Continued

- (c) Assess the ripple effects of the proposed adverse scenarios in step 3.

Commentary on Question:

A successful candidate was able to form an assessment based on the material from the CIA DCAT study note from page 23.

- Constraints to rate increases as the industry reacts slowly in implementing renewal rate increases.
- Rate guarantees that limit or delay required rate increases.
- Increases in anti-selective lapses that may dampen—or nullify—the intended effect of rate increases.
- Adverse publicity/reputation damage arising from claim or underwriting practices associated with health/disability/sickness insurance, leading to decreased sales of new business.

- (d) Recommend corrective management actions to counter adverse scenarios. Justify your answer.

Commentary on Question:

Most candidates typically responded with increasing rates and better claims management, however there were other valid responses that were accepted.

- Increasing rates or repricing benefits or modifying benefits.
- More active claims management.
- Increasing capital.
- And any other reasonable action.

6. Learning Objectives:

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

Learning Outcomes:

- (5b) Describe the major applicable laws and regulations and evaluate their impact.
- (5c) Understand the impact of the taxation of both insurance companies and the products they provide.

Sources:

GHFV-705-20: Assuris for Group Insurance in Canada

GHFV-644-17: TACCESS: An Advisor's Guide to Understanding How Taxes Impact Group Insurance Benefits in Canada

GHFV-647-15: Protecting Canadians' Long Term Disability Benefits

GHFV-659-16: Ontario 2014 Budget Will Forbid Employers from Self-Insuring Long Term Disability Plan to Employees

GHFV-648-15: Canadian Life and Health Insurance Industry Agreement to Protect Canadians' Drug Coverage

GHFV-625-16: Legal Aspects of Group Insurance in the Province of Québec (2015 Edition)

Solution:

- (a) List the regulatory filings that Assuris receives from member companies.
- Annual regulatory filing
 - Financial Statements
 - Appointed actuary's report
 - Dynamic Capital Adequacy report
- (b) Calculate the amounts guaranteed by Assuris for Mary and John for each group benefit offered by Another Day. State any assumptions and show your work.

6. Continued

- Mary
 - Insured Amounts:
 - Basic Life: $\min(2 \times 150,000, 500,000) = 300,000$
 - Basic ADD: $\min(2 \times 150,000, 500,000) = 300,000$
 - Short Term Disability: $\min(0.75 \times 150,000 / 52, 1,000) = 1,000$
 - Long Term Disability: $\min(0.6667 \times 150,000 / 12, 5,000) = 5,000$
 - Extended Health Care: $1,850 - 95 - 500 = 1,255$
 - Dental: N/A
 - HSA: N/A
 - Guarantee Amounts:
 - Basic Life: $\min(\max(300,000 \times 85\%, 200,000), 300,000) = 255,000$
 - Basic ADD: $\min(\max(300,000 \times 85\%, 200,000), 300,000) = 255,000$
 - Short Term Disability: $\min(\max(1,000 \times 85\%, 2,000), 1,000) = 1,000$
 - Long Term Disability: $\min(\max(5,000 \times 85\%, 2,000), 5,000) = 4,250$
 - Extended Health Care: $\min(\max(1,255 \times 85\%, 60,000), 1,255) = 1,255$
 - Dental: N/A
 - HSA: N/A
- John
 - Insured Amounts:
 - Basic Life: $\min(2 \times 50,000, 500,000) = 100,000$
 - Basic ADD: $\min(2 \times 50,000, 500,000) = 100,000$
 - Short Term Disability: $\min(0.75 \times 50,000 / 52, 1,000) = 721$
 - Long Term Disability: $\min(0.6667 \times 50,000 / 12, 5,000) = 2,778$
 - Extended Health Care: $164,000 - 1,000 - 500 = 162,500$
 - Dental: N/A
 - HSA: N/A
 - Guarantee Amounts:
 - Basic Life: $\min(\max(100,000 \times 85\%, 200,000), 100,000) = 100,000$
 - Basic ADD: $\min(\max(100,000 \times 85\%, 200,000), 100,000) = 100,000$
 - Short Term Disability: $\min(\max(721 \times 85\%, 2,000), 721) = 721$

6. Continued

- Long Term Disability: $\min(\max(2,778 \times 85\%, 2,000), 2,778) = 2,361$
- Extended Health Care: $\min(\max(162,500 \times 85\%, 60,000), 162,500) = 138,125$
- Dental: N/A
- HSA: N/A

(c) Calculate the pooled amount for Mary and John under the following industry programs:

- (i) Quebec Drug Insurance Pooling Corporation (QDIPC)
- (ii) Canadian Drug Insurance Pooling Corporation (CDIPC)

State any assumptions and show your work.

	Mary	John
QDIPC Eligible expenses	$1,850 - 95 - 500 = 1,255$	$164,000 - 1,000 - 500 = 162,500$
QDIPC Pooled Amount	0 (Mary is in Ontario)	$\max(162,500 - 120,000) = 42,500$
CDIPC Eligible expenses	0	$120,000 - 32,500 = 87,500$
CDIPC Pooled Amount	0	$\min(87,500 \times 85\%, 500,000) = 74,375$

(d) Calculate the amounts of taxable benefit at the Federal and Provincial levels for Mary and John. State any assumptions and show your work.

	Mary		John	
	Provincial	Federal	Provincial	Federal
Basic Life Insurance	$150 \times 2 \times 0.463 \times 12 = 1,666.80$	1,666.80	$50 \times 2 \times 0.463 \times 12 = 555.60$	555.60
Basic AD&D	$150 \times 2 \times 0.03 \times 12 = 108.00$	108.00	$50 \times 2 \times 0.03 \times 12 = 36.00$	36.00
Short Term Disability	0.00	0.00	0.00	0.00
Long Term Disability	0.00	0.00	0.00	0.00
Extended Health Care	0.00	0.00	$187 \times 12 = 2,244.00$	0.00
Dental	0.00	0.00	$119 \times 12 = 1,428.00$	0.00
Health Spending Account	0.00	0.00	500.00	0.00
Total	1,774.80	1,774.80	4,763.60	591.60

(e) Another Day is exploring the idea of converting its LTD plan to a self-insured basis.

Critique this idea. Justify your answer.

6. Continued

- Since the head office of Another Day is located in Ontario, according to laws of this province, then it would theoretically not be possible to convert its fully-insured LTD plan into an uninsured basis.
 - Typically under a self-insured basis, insurer expenses are lower (i.e. no risk charge) and would be appropriate if this was the client's main objective. The client will also have more flexibility as to investments (for funds in excess of expected claims and expenses) as well as plan design since the insurer is not at risk.
 - Consideration about funding would have to be considered. Employees will now also be exposed to the risk of insolvency since the benefit would not be backed by Assuris. There would also be additional cost to complete and actuarial valuation for reporting and funding purposes.
- (f) Describe the regulatory regime for Canadian Life and Health insurers pertaining to LTD.
- All insurers in Canada are subject to comprehensive prudential regulation from either the federal government, through OSFI or one of the Provincial regulators.
 - Life and health insurance companies are also subject to comprehensive provincial market conduct regulation by the provinces in which they carry on business.
 - Insurance companies build up reserves by putting money safely aside for the purpose of paying future benefits.
 - Insurers are required to hold additional capital to support the guarantee embedded in the insurance contracts.
 - MCCR (now LICAT) are established by regulators, with an expectation that at least 150% of this value will be held by the insurer to protect benefit payments.
 - The insurance industry regulatory framework provides consumers with recourse to ensure proper access to a claim review when needed.
 - This is available through the Ombudservice for Life and Health Insurance (OLHI), a national independent complaint resolution and information service for consumers.