

GH CORC Model Solutions

Spring 2015

1. Learning Objectives:

6. Evaluate the impact of regulation and taxation on companies and plan sponsors in Canada.

Learning Outcomes:

- (6b) Describe the major applicable laws and regulations and evaluate their impact.

Sources:

Protection of Personal Information Study Note

Commentary on Question:

This question was meant to test the candidate's understanding of the protection of personal information regulations, a very important by-product of the analytical basis of actuarial science.

Generally, most candidates received part marks for this question, as not enough aspects of the regulations were explored to receive full marks.

Solution:

- (a) Describe the principles governing the protection of personal information

Commentary on Question:

Some candidates did not receive full credit for their answers as they simply listed, as opposed to "described", the various principles.

- Accountability – organization responsible for information under its control and will designate individuals who are accountable for compliance
- Identifying purpose – purpose of collection should be identified before or at time of data collection
- Consent – knowledge and consent of individuals required for collection, use or disclosure of personal information except where inappropriate
- Limiting collection – limit collection of data to that which is necessary for identified purpose
- Limiting use, disclosure and retention – do not use or disclose information for reasons other than which it was collected except with consent, retain only as long as necessary
- Accuracy – information shall be as accurate, complete and up to date as necessary

1. Continued

- Safeguards – information shall be protected by security safeguards appropriate for sensitivity of information
- Openness – organization will make available to individuals specific information about its policies and practices relating to information
- Individual access – upon request an individual should be informed of existence, use and disclosure of personal information and shall be given access to that information; individual can challenge accuracy and completeness
- Challenging compliance – individual shall be able to address a challenge concerning compliance with above principals

(b) Outline:

- (i) when consent to collect personal information is required
- (ii) when consent is generally collected
- (iii) the general forms of consent
- (iv) when consent to collect personal information can be implied
 - (i)
 - Consent is required whenever personal information is collected, used or disclosed
 - Limited exceptions exist, such as disclosures required by law, investigations of potential breach of agreement or solicitor client privilege
 - (ii)
 - Most typically collected when transaction or relationship is initiated
 - (iii)
 - Consent should be expressed and informed but considerable flexibility in determining form of consent (i.e. could be written or oral consent)

1. Continued

(iv)

- Generally, consent should be expressed especially for information that is sensitive
- Consent can be implied from certain actions when the implications would be clearly understood by a reasonable person
- Consent can be applied for information collected prior to effective date of rules

(c) Describe the information a company must provide around its information management practices.

- In general must be open regarding policies and practices relating to management of personal information
- Overview of company's practices in collecting, using, disclosing and protecting personal information must be available
- Company could provide details in employee booklet or separate brochure, on a website or in other communication vehicles
- Name or title and address of person accountable must also be available
- Means of gaining access to information must be readily available
- Description of types of information held and general use description must be shared
- Copy of any brochures or other information explaining organizations policies, standards or codes must be available
- Disclosure that personal information is available to related organizations, if applicable

2. Learning Objectives:

3. The candidate will understand how to recommend an employee benefit strategy.
4. The candidate will understand how to describe Government Programs providing Health and Disability Benefits in Canada.

Learning Outcomes:

- (3a) Describe employer's rationale and strategies for offering employee benefit plans.
- (4a) Describe benefits and eligibility requirements for social programs in Canada.

Sources:

Benefits Legislation in Canada, Mercer

Communique: Ontario Generic Drug Price reforms Finalized

Commentary on Question:

Candidates should be familiar with major provisions of provincial drug plans in each province. Most candidates were able to describe Ontario plan for age 65 +; but very few described Alberta and BC plans.

Comments on provincial plan premiums, or comments on coverages other than drugs were not given any credits.

Solution:

- (a) Describe the provincial plan coverage available in each province where CfS operates.

Commentary on Question:

Many candidates did not focus on drug plans, instead they discussed other provincial coverages such as hospital, disability and provincial plan premiums. Many also mentioned social assistant.

In Ontario:

1. Residents age 65 and over, with an income over the threshold each pays annual deductible \$100 before they are eligible for coverage (plus up to \$6.11 per prescription).
2. Residents age 65 and over with an income below the threshold only have to pay \$2 per prescription.
3. For residents under age 65 whose drug costs are not completely covered by private insurance, there is a catastrophic coverage with 100% reimbursement after a large deductible varying with family income and size (plus \$2 per prescription).

2. Continued

In BC:

1. Family deductible and annual out-of-pocket maximum based on date of birth and net annual family income.
2. CFS' retirees were born in 1940 or later and have income greater than \$30,000; therefore: family deductible = 3% of net annual income. Reimbursement after deductible reached = 70% of eligible drugs. Annual out-of-pocket maximum = 4% of net annual income

In AB

70% reimbursement for residents age 65 and over and Out-of-pocket maximum of \$25 per prescription

- (b) Calculate the amounts payable by the company plan and the amounts payable by the provincial plan in each province. State your assumptions and show your work.

Commentary on Question:

Candidates in general did not do very well on this question. Many failed to breakdown analysis by province or differentiate plans below or above age 65.

Most candidates can correctly calculate Ontario plan costs, but very few correctly calculated Alberta and BC.

Also noted some candidates used estimates, maybe from their working experiences, e.g. saying in ON, provincial plan covers about 80% of the costs. Candidates taking this approach were not rewarded for accurately reflecting the appropriate provision but were not penalized on future steps

ONTARIO		
Assume that company plan covers cost for spouses of retirees too		
Assume that spouses are the same age as the corresponding retiree		
Assume no catastrophic claims		
Retirees age 60 (1 point)		
(i) Number retirees	25	= 50% x 50 retirees
(ii) Number persons	45	= (i) x (1 + 80% married)
(iii) Number of formulary drug claims	787.50	= (ii) x (25 drug claims) x (70% on formulary)
(iv) Number of non-formulary drug claims	337.50	= (ii) x (25 drug claims) x (30% non-formulary)
(v) Cost for provincial plan for retirees & spouses age 60	\$0.00	= \$0 - under 65, not covered unless catastrophic coverage
(vi) Cost for company plan for retirees & spouses age 60	\$73,125.00	= \$50 x (iii) + \$100 x (iv)
Retirees age 65 (5 points)		
Per person annual deductible on formulary	\$100.00	
Cost per script on formulary	\$106.93	= 6.11 x 25 x 0.7
Cost of drug claims per person on formulary	\$875.00	= 25 x 50 x 0.7
Cost of drug claims per person on non-formulary	\$750.00	= 25 x 100 x 3
Provincial plan pays per Single person	\$668.08	= 875 - 100 - 106.93
Provincial plan pays per Married person	\$1,336.15	= 668.08 x 2
Company plan pays per Single person	\$956.93	= 875 - 668.08 + 750
Company plan pays per Married person	\$1,913.85	= 875 x 2 - 1336.15 + 750 x 2
Cost for provincial plan for retirees & spouses age 65	\$30,063.38	= 25 x (668.08 x 0.2 + 1336.15 x 0.8)
Cost for company plan for retirees & spouses age 65	\$43,061.63	= 25 x (956.93 x 0.2 + 1913.85 x 0.8)
All Retirees (2 points)		
Total cost for provincial plan	\$30,063.38	
Total cost for company plan	\$116,186.63	= 73125 + 43061.63

BRITISH COLUMBIA		
Assume current year is 2014, therefore all retirees born in 1940 or later		
Annual family income = \$50,000, therefore all retirees have net family income greater than \$30,000		
Assume that company plan covers cost for spouses of retirees too		
For each retiree:		
(i) Family deductible	\$1,500.00	= 3% x \$50,000
(ii) Maximum out of pocket	\$2,000.00	= 4% x \$50,000
(iii) Cost of drug claims for Single retiree on formulary	\$875.00	= 25 x \$50 x 70%
(iv) Cost of drug claims for Married retiree on formulary	\$1,750.00	= 25 x 2 x \$50 x 70%
(v) Cost of drug claims for Single retiree on non-formulary	\$750.00	= 25 x \$100 x 30%
(vi) Cost of drug claims for Married retiree on non-formulary	\$1,500.00	= 25 x 2 x \$100 x 30%
(vii) Provincial plan pays for a Single retiree	\$0.00	= MIN [(ii), 70% x MAX [0, (iii) - (i)]]
(viii) Provincial plan pays for a Married retiree	\$175.00	= MIN [(ii), 70% x MAX [0, (iv) - (i)]]
(ix) Company plan pays for a Single retiree	\$1,625.00	= (iii) - (vii) + (v)
(x) Company plan pays for a Married retiree	\$3,075.00	= (iv) - (viii) + (vi)
For all retirees:		
Cost for provincial plan	\$7,000.00	= \$50 x [(vii) x 20% + (viii) x 80%]
Cost of company plan	\$139,250.00	= \$50 x [(ix) x 20% + (x) x 80%]

2. Continued

ALBERTA		
Assume that company plan covers cost for spouses of retirees too		
Assume that spouses are the same age as the corresponding retiree		
Retirees age 60 (1 point)		
(i) Number retirees	25	= 50% x 50 retirees
(ii) Number persons	45	= (i) x (1 + 80% married)
(iii) Number of formulary drug claims	787.50	= (ii) x (25 drug claims) x (70% on formulary)
(iv) Number of non-formulary drug claims	337.50	= (ii) x (25 drug claims) x (30% non-formulary)
(v) Cost for provincial plan for retirees & spouses age 60	\$0.00	= \$0 - under 65, not covered
(vi) Cost for company plan for retirees & spouses age 60	\$73,125.00	= \$50 x (iii) + \$100 x (iv)
Retirees age 65 (2 points)		
Per person out-of-pocket maximum on formulary	\$437.50	= \$25 x 25 drug claims x 70%
Cost of drug claims per person on formulary	\$875.00	= 25 x \$50 x 70%
Cost of drug claims per person on non-formulary	\$750.00	= 25 x \$100 x 30%
Provincial plan pays per person	\$612.50	= 0.7 x 875 (out of pocket max not hit)
Company plan pays per person	\$1,012.50	= 875 - 612.5 + 750
Cost for provincial plan for retirees & spouses age 65	\$27,562.50	= 25 x (612.5 x 0.2 + 612.5 x 0.8)
Cost for company plan for retirees & spouses age 65	\$45,562.50	= 25 x (1012.5 x 0.2 + 1012.5 x 0.8)
All Retirees (1 point)		
Total cost for provincial plan	\$27,562.50	
Total cost for company plan	\$118,687.50	= 73125 + 45562.5

- (c) Describe the impact recent generic drug price changes in Ontario may have had on CFS' drug costs and suggest potential plan changes to maximize savings.

Commentary on Question:

Most candidates correctly listed 2 drug reform changes (eliminate rebate; capped generic drug).

In Ontario, recent drug reform changes have:

1. Eliminated professional allowances, or rebates, provided to pharmacies
2. Capped generic drugs at 25% of the cost of the equivalent brand-name drug
3. Increased maximum allowable dispensing fees

Pharmacies reactions:

1. Pharmacies, due to losing the professional allowances, may have negotiated higher ingredient cost mark-ups with the pharmacy benefit managers.
2. Furthermore, pharmacies may have increased dispensing fees for drugs not paid for by ODB to recover some of the revenue losses in other areas.

2. Continued

Impact on CfS:

It is likely that drug pricing reform has resulted in savings for CfS for the reasons listed above, but there are plan design aspects that CfS should consider:

- CfS should use a pharmacy benefit manager to cap the mark-up the pharmacist can apply
- CfS should have a mandatory generic substitution provision
- Dispensing fees should be capped at a reasonable limit

- (d) Assess the value of the company plan to retirees in each province and explain the potential impact of future government cost shifting on CfS.

Commentary on Question:

Quantification of plan value is required to get full credits. However, very few candidates did the calculation; many only provided general comments.

Some candidates evaluated the plan value to the company rather than from the retiree's point of view.

Many candidates only commented on Ontario above age 65 and only a few discussed Alberta, BC and Ontario under age 65.

Ontario

- While under age 65, the company plan pays 100% of costs, and is therefore very valuable to retirees. If the company's plan did not exist, the retiree would have to cover 100% of costs or approximately \$1,625 per person (\$73,125 / 45) per year while under age 65.
- When age 65 and over, all of their costs not covered by the province – including the deductible and amount per script – are covered by the company plan. If company plan did not exist, the retiree would have to cover the portion of costs not covered by the provincial plan or approximately \$912 (\$41,062 / 45) per person when over age 65.

British Columbia

- The company plan pays the portion of costs not covered by the province. If the company plan did not exist, retirees would have to cover the portion of costs not covered by provincial plan or approximately \$1,457 (\$139,250 / 90) per person.

2. Continued

Alberta

- i. While under age 65, the company plan pays 100% of costs, and is therefore very valuable to them. If company's plan did not exist, the retiree would have to cover 100% of costs or approximately \$1,625 per person ($\$73,125 / 45$) per year while under age 65.
- ii. When age 65 and over, all of their costs not covered by the province are covered by the company plan. If company plan did not exist, the retiree would have to cover the portion of costs not covered by the provincial plan, approximately \$2,638 ($\$118,688 / 45$) per person when over age 65.

Potential impact of future government cost shifting

- i. In Ontario and Alberta, it would mean that the company plan would have to pick up more of the post-65 costs if the company wishes to continue to cover all benefits not covered by the province. In BC, it would be a similar, but for all retirees.
- ii. Could put financial strain on company. Especially in Ontario and Alberta where government covers a significant share of costs post age 65.
- iii. May cause the company to restructure the plan to share the cost of retiree benefits more with the retirees. Could see company moving from more of a provider of benefits to a facilitator's role.
- iv. Would reduce cost for governments – especially in Ontario and Alberta

3. Learning Objectives:

7. The candidate will understand and evaluate Retiree Group and Life Benefits in Canada

Learning Outcomes:

- (7a) Describe why employers offer retiree group and life benefits.
- (7c) Determine employer liabilities for retiree benefits under various accounting standards.

Sources:

Morneau Shepell Chapter 22

Towers Watson Comparison of IAS 19 (2008) to IAS 19 (2011)

IAS 19 study note

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Outline a memo to Drain Tube's employees focusing on why Drain Tube offers these benefits.

Commentary on Question:

Most candidates performed well in this section.

Memo should outline the following aspects:

Paternalism – take care of and reward long service employees

Extension of active employee benefits – health/dental plans are consistent with active benefits

Competitiveness – employee attraction

Negotiation – although not explicitly stated whether or not union members would receive this memo, credit was given

Employee entitlement – employees close to retirement are likely counting on this program, however, younger employees may not be relying on these benefits at all

Employer precedent – plan has been in place for over 20 years

Cost deferral – no longer applicable since liability must be accrued

- (b) Outline a memo to the CFO discussing the alternatives, including pros and cons of each.

3. Continued

Commentary on Question:

Most candidates were able to identify alternatives, however, did not provide relevant unique pros and cons. General pros and cons (i.e. employer will reduce liability and employees will be angry, for every alternative) did not receive multiple credit for each repetition across alternatives.

Memo outline should include.

Option	Pros	Cons
Health benefits to age 65 or 70	- Significant cost savings available	- Doesn't match active plan - Retirees may not be able to access benefits when they need them most
Lifetime or annual maximum on health benefits	- Some cost savings available with lifetime maximum, more cost savings available with annual maximum	- Same as above
Eliminate dental benefits	- Retiree dental less common, so could be viewed as in line with market	- Doesn't match active plan - Fewer cost savings available since coverage only extends to age 65
Introduce retiree contributions	- Helps to make retirees more aware of the cost of the benefits - Can realistically price to remove any subsidy by active employees	- If participation is voluntary, may have anti-selection effects - May or may not be consistent with active plan
Change life benefit e.g. same as when active but only to age 70	- Same as above	- Same as above
Stricter minimum eligibility requirements e.g. 55 and 20, 80 points	- Rewards long-service employees	- Certain members close to "cut-off" date may feel unduly penalized, even with close to long service
Switch to defined contribution approach e.g. HSA	- Fixed employer costs - Can tie HSA allocation to years of service - Can be used to purchase individual health insurance, if desired - Removes trending	- Retirees may not have sufficient funds to cover catastrophic illness

3. Continued

- (c) Describe the differences between IAS 19 (2008) and IAS 19 (2011), from a financial reporting perspective.

Commentary on Question:

Candidates either performed well on this question, or not at all. Partial credit given to responses which did not differentiate the allocation between OCI and/or P&L.

- Under IAS 19 (2008) organizations could choose whether they wanted to amortize gains and losses; under IAS 19 (2011) they must recognize them immediately in OCI
- Service cost includes past service cost due to plan amendments (immediately recognized through P&L)
- Interest on service cost may be allowed for in the service cost, or in the interest cost (but it is not required)
- Gains and losses are categorized as demographic, financial, and experience

(d)

- (i) (2 points) Prepare a table reconciling the end of year DBO for each year under IAS 19 (2011). Show your work.
- (ii) (1 point) Identify possible explanations for the actuarial gain or loss in each year.

Commentary on Question:

Candidates were generally successful in reconciling end of year DBO. Some candidates did not calculate the impact of Actual vs. Expected benefit payments in the gain/loss reconciliation, even though they mentioned it as a potential source for actuarial gain loss in part ii). Some candidates also incorrectly based interest cost calculation on Actual benefit payments (as opposed to Expected benefit payments). While IAS 19 (2011) contemplates interest on service cost to be allowed for in the service cost, both methods are acceptable.

3. Continued

(i)

Interest on service cost in service cost

	2014 (current year)	2013 (prior year)
Beginning of year DBO	\$1,300,000	\$1,000,000
Service cost*	\$258,750	\$206,000
Interest cost*	\$42,438	\$27,750
Actual benefit payments	(\$160,000)	(\$200,000)
Actuarial (gains) losses	(\$541,188)	\$266,250
End of year DBO	\$900,000	\$1,300,000

Interest on service cost in interest cost

	2014 (current year)	2013 (prior year)
Beginning of year DBO	\$1,300,000	\$1,000,000
Service cost*	\$250,000	\$200,000
Interest cost*	\$51,188	\$33,750
Actual benefit payments	(\$160,000)	(\$200,000)
Actuarial (gains) losses	(\$541,188)	\$266,250
End of year DBO	\$900,000	\$1,300,000

(ii)

- Actual versus expected benefit payments
- Change in data – demographics
- Change in discount rate
- Change in other assumptions, such as salary scale, termination assumption, retirement assumption, claims cost assumption, benefit inflation assumptions, utilization by age assumptions, or any other reasonable assumption that would contribute to an actuarial gain or loss

- (e) Calculate the annual benefit cost for 2013 and 2014 under the accounting standard in force at that time. Specify the amount recognized through P&L and through Other Comprehensive Income (OCI). Show your work.

Commentary on Question:

Candidates did not receive full credit if they did not specify differences in P&L and OCI for 2014. Some candidates also included actuarial gain loss as calculated in d) in 2013 annual benefit cost, which is incorrect as under the amortization method, only unamortized amounts at the beginning of the year (i.e. year end 2012) would be amortized. Candidates correctly identified service cost and interest cost. Similar to d), interest on service cost can be reflected in either service cost or interest cost. Under IAS 19 (2011), immediate recognition of the plan change should also be reflected as a past service cost in P&L.

3. Continued

	2014 (current year)	2013 (prior year)
Service cost	\$258,750	\$206,000
Past service cost	(\$150,000)	\$0
Interest cost	\$42,438	\$27,750
Actuarial (gains) losses	(\$541,188)	\$0
Total benefit cost	(\$390,000)	\$233,750
Recognized in P&L	\$151,188	\$233,750
Recognized in OCI	(\$541,188)	\$0

4. Learning Objectives:

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

Learning Outcomes:

- (5c) Project financial outcomes and recommend strategy to senior management to achieve financial goals.
- (5g) Explain fair value accounting principles and describe International Accounting Standards (IAS)

Sources:

CIA Educational Note Classification of Contracts Under International Financial Reporting Standards pp 3-4, 17

Bluhm Chp. 21 p330, p 756-760

IFRS 4 p A186-A188, A191

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Describe the four International Financial Reporting Standards that apply to most contracts, and the decision criteria used when determining which standards apply.

Commentary on Question:

For Full marks it was important to identify the four standards that apply and the circumstances when each should be used. If the answer correctly discussed the application of embedded derivatives or unbundling of a contract into components and did not speak to the direct application of all types of reporting full credit was still attainable.

There are four types of IFRS reporting:

1. IFRS 4, Insurance Contracts – provides guidance for determining if a contract is an insurance (or reinsurance) contract.
2. IAS 32, Financial Instruments: Disclosure and Presentation - provides guidance for determining whether a contract is a financial instrument.
3. IAS 39, Financial Instruments: the financial reporting standard for financial instruments other than insurance contracts.
4. IAS 18, Revenue - provides financial reporting requirements for revenue from rendering services.

4. Continued

There are a few key decision criteria used when determining which standards apply:

1. Determine if the contract contains significant insurance risk. If yes, then the contract is an insurance contract and IFRS 4 applies.
 2. If it is not insurance, determine if the contract is a financial instrument (e.g., it creates financial liabilities, equity instruments, or financial assets). If yes, then the contract is an investment contract. If no, the contract is a service contract and IAS 18 applies.
 3. If the contract is an investment contract, determine if the contract contains a discretionary participation feature (DPF). If yes, then IFRS 4 and IAS 32 are applicable. If no, then IAS 32 and IAS 39 apply.
 4. Determine if the contract contains a service component. If yes, then acquisition and other servicing expenses related to the service component and related earnings are accounted for under IAS 18. The rest of the contract is accounted for under IAS 39.
- (b) Your new boss has asked if the LTD interest rate should reflect the estimated return on assets and if the margins should be reduced. Outline a response to your boss' questions, including an explanation of when an insurer may change accounting policies and issues related to:
- Current interest rates,
 - Continuation of existing practices,
 - Prudence, and
 - Future investment margins

Commentary on Question:

The candidate needed to address all elements of the above bullets for full marks.

An insurer may change its accounting policies for insurance contracts if and only if, the change makes the financial statements more relevant to the economic decision-making needs of users and no less reliable, or more reliable and no less relevant to those needs.

If an insurer elects to change its accounting policies to reflect current market interest rate, it shall continue to apply current market interest rate (and, if applicable, the other estimates and assumptions) consistently in all periods to all these liabilities.

An insurer may continue but not introduce the following practices:

- (1) Measuring insurance liabilities on an undiscounted basis
- (2) Measuring contractual rights to future investment management fees at an amount that exceeds their fair value as implied by a comparison with current fees charged by other market participants for similar services
- (3) Using non-uniform accounting policies for the insurance contracts (and related deferred acquisition costs and related intangible assets, if any) of subsidiaries, with some exceptions

4. Continued

An insurer need not change its accounting policies for the insurance contracts to eliminate excessive prudence.

An insurer need not change its accounting policies for insurance contracts to eliminate future investment margins.

- (c) Describe the information that an insurer should disclose to explain amounts in its financial statements arising from insurance contracts.

Commentary on Question:

Candidates were generally very light on their knowledge and understanding of the requirements. Many candidates simply listed out the numerical elements of the statements and neglected to speak to the descriptive support element.

An insurer shall disclose information that identifies and explains the amounts in its financial statements arising from insurance contracts. Such as:

1. Its accounting policies for insurance contracts and related assets, liabilities, income and expense.
 2. The recognized assets, liabilities, income and expense (and, if it presents its statement of cash flows using the direct method, cash flows) arising from insurance contracts. The insurer shall disclose gains and losses recognized in profit or loss on buying reinsurance
 3. The process used to determine the assumptions that have the greatest effect on the measurement of the recognized amounts.
 4. The effect of changes in assumptions used to measure insurance assets and insurance liabilities, showing separately the effect of each change that has a material effect on the financial statements.
- (d) Analyze the financial results for the insured and ASO medical lines by constructing a same-size income statement and explain the advantages and disadvantages of this approach. State your assumptions and show your work.

4. Continued

		ASO		Insured	
		Actual Dollar	% of Total Revenue	Actual Dollar	% of Total Revenue
Revenue	Premium	\$0	0%	\$300,000,000	93%
	Other	\$135,000,000	100%	\$24,000,000	7%
	Subtotal	\$135,000,000	100%	\$324,000,000	100%
Expense	Claims	\$0	0%	\$270,000,000	83%
	Administrative	\$118,800,000	88%	\$36,000,000	11%
	Subtotal	\$118,800,000	88%	\$306,000,000	94%
Profit			12%		6%

Advantages

- Eases comparability by standardizing financial statements
- It is simple and quick to complete

Disadvantages

- It does not differentiate between two independent relationships: the competitive pressure on health plan pricing and the challenges of actually managing the operations themselves
- If the analyst is only focusing on a specific part of the same-size income statement (i.e., comparing the expenses under ASO arrangement and insured arrangement), the business model may skew the results (sometimes significantly)

- (e) Your boss decides that for the group medical block of business, only ASO contracts should be offered moving forward given that they are so much more profitable than the insured block. Outline a response to your boss' position with supporting financial information. Show your work.

Commentary on Question:

The solution below shows a per member per month answer. Acceptable results were also done on an annual basis. The candidate was required to prepare a summary statement for the boss on a recommended go forward approach. The calculations are required to defend your position.

4. Continued

		ASO		Insured
Covered Lives		900,000		200,000
Member Month		10,800,000		2,400,000
Revenue	Premium	\$0		\$300,000,000
	Other	\$135,000,000		\$24,000,000
	Subtotal	\$135,000,000		\$324,000,000
Revenue PMPM	Premium	\$0		\$125
	Other	\$12.50		\$10
	Subtotal	\$12.50		\$135
Expense	Claims	\$0		\$270,000,000
	Administrative	\$118,800,000		\$36,000,000
	Subtotal	\$118,800,000		\$306,000,000
Expense PMPM	Claims	\$0		\$112.50
	Administrative	\$11.00		\$15
	Subtotal	\$11.00		\$127.50
Profit		\$1.50		\$7.50

ASO profit = \$135,000,000 - \$118,800,000 = \$16,200,000

Insured profit = \$324,000,000 - \$306,000,000 = \$18,000,000

The same size method indicates that higher profit margin in the ASO business. However, the per member method indicates that the insured business has a higher profit margin.

I support the Insured business because it generates higher profit in actual dollars.

5. Learning Objectives:

6. Evaluate the impact of regulation and taxation on companies and plan sponsors in Canada.

Learning Outcomes:

- (6b) Describe the major applicable laws and regulations and evaluate their impact.

Sources:

Canadian Handbook of Flexible Benefits, 3rd Edition, McKay
Ch. 12 Taxation of Flexible Benefits (12.1 – 12.4)

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Discuss the requirements in order for a flexible medical and dental benefits plan, outside Quebec, to be tax-free to the employee.

Commentary on Question:

Many candidates proceeded directly in describing requirements for a Health Spending Account to be tax-free, as opposed to the Flexible Benefits plan. References to Health Spending Accounts were used in part b) for potential marks. Generally, most candidates correctly identified the necessity for an irrevocable choice be made prior to the start of a year, however, did not describe the requirement associated with a PHSP

- Plan must qualify as a private health services plan (PHSP)
 - A PHSP is an undertaking by one person (or party) to indemnify another person for an agreed upon consideration from a loss or liability in respect of an event, the happening of which is uncertain.
 - Flex elections must be paid prior to the start of the year, and be irrevocable, with the exception of a life event.
 - If an expense payment is not a medical expense under subsection 118.2(2), the plan will not qualify as a PHSP (i.e. will not qualify for the Medical Expense Tax Credit)
- (b) Outline your response to Joey Bats.

5. Continued

Commentary on Question:

In general, the two roll-forward methodologies were correctly answered.

Candidates who discussed rolling forward credits without mentioning a Health Spending Account would receive minimal credit as a Flexible Benefits plan does not allow one to roll forward credits. Only when the excess credits are rolled into an HSA can unused HSA balances be rolled forward.

A few candidates assumed Joey Bats was in Quebec and, if the candidate properly disclosed this assumption, noting that excess funds would be taxable in an HSA was deemed correct.

Excess funds should be provided to employees in the form of a Health Spending Account, which is a vehicle intended to qualify as a PHSP, and is therefore tax-free to the employee

CRA's rules for an HSA to qualify as a PHSP:

- Excess HSA balances may be rolled over for up to 12 months after the end of a plan year and be used to reimburse the following year's expenses
 - Any claims reimbursed through an HSA is first offset with rolled forward balances before offset against current year allocations
- Alternatively, unreimbursed expenses may be rolled over for up to 12 months after the end of a plan year and may be claimed from the following year's HSA
- The participant must have allocated funds to the HSA in the prior year in order to roll expenses forward. Otherwise, according to CRA, the HSA would not have the requisite element of insurance needed in order to qualify as a PSHP

- (c) Describe alternative options for Joey Bats to consider.

Commentary on Question:

While this question was structured to specifically address an employee's large out of pocket costs, many candidates focused on the fact that Joey Bats does not want to pay 100% coinsurance and mentioned pooling as an option. This did not receive full credit unless an increase to the employee's reimbursement was mentioned because simply adding pooling would not address the employee's large out of pocket costs. Generally, many answers were able to receive credit towards full marks, as long as they addressed increased reimbursement from the employee standpoint while including some mitigation of risk from the employer standpoint (i.e. tiered formularies, mandatory generic substitution, etc.).

5. Continued

With the introduction of incentive compensation, Joey Bats can allow the employee to allocate a portion of his/her bonus to their HSA, as described in the CRA advance tax ruling 2004-0091211R3. This gives the member a tax-advantaged method to purchase their prescription drugs.

Providing an HSA in general would also help alleviate employee out-of-pocket costs while capping Joey Bats' risk.

Joey Bats could introduce a maximum out-of-pocket provision to the plan so that after a certain threshold the plan begins to reimburse at 100%.

Joey Bats could increase the plan coinsurance, while incorporating stop-loss medical pooling. This will provide employees with full coverage, however, limit Joey Bats' risk depending on their tolerance.

Some provincial programs offer assistance for certain high cost treatments. Joey Bats could encourage the employee to apply for this funding to help with the overall cost.

6. Learning Objectives:

5. The candidate will understand how to prepare and interpret insurance company financial statements in accordance with U.S. Statutory Principles and GAAP.

Learning Outcomes:

- (5c) Interpret the results of both statutory and GAAP statements from the viewpoint of various stakeholders, including regulators, senior management, investors.

Sources:

Higgins 10th Ch1 Interpreting Financial Statements

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) The VP would like to better understand the Cash Flow-Production Cycle.

- (i) Describe the Cash Flow-Production Cycle.
- (ii) Describe the two principles demonstrated by the Cash Flow-Production Cycle.

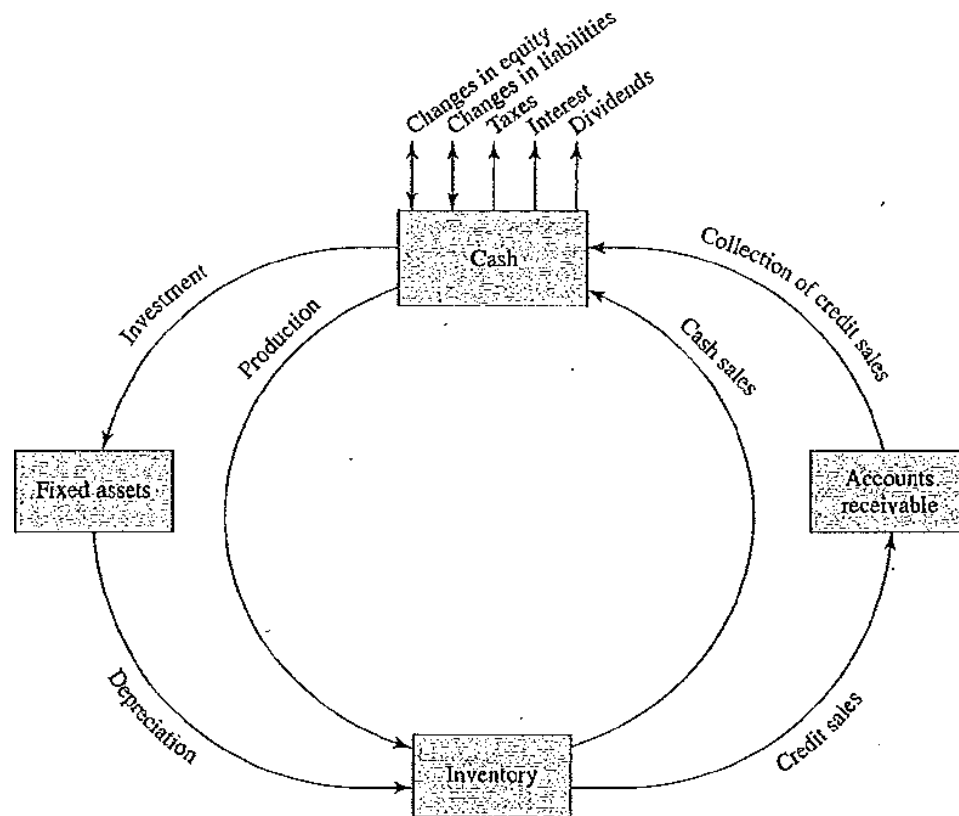
Commentary on Question:

For part (i), candidates are required to describe or illustrate the picture below. It is not necessary to draw the picture as long as a reasonable description of the production cycle is provided.

About half the candidates were able to identify the components of the cash flow-production cycle to receive full marks. The majority of incorrect responses provided a description of a cash flow statement or the life cycle of a business.

For part (ii), very few candidates were able to identify the two principles as outlined in the source material.

6. Continued



Definition: the movement of cash to inventory, to accounts receivable and back to cash is the firm's operating, or working capital, cycle.

- Cash is used to purchase raw materials and hire workers
- Raw materials used to make products which sit in inventory
- Sell products, which either generates cash or receivable (which will generate cash later)

Key principles:

1. First, financial statements are an important window into reality. A company's operating policies, production techniques, and inventory and credit-control systems fundamentally determine the firm's financial profile. The linkage between a company's operations and its finances is our rationale for studying financial statements.
2. The second principle illustrated in Figure 1.1 is that profits do not equal cash flow. Cash and the timely conversion of cash into inventories, accounts receivable, and back into cash is the lifeblood of any company. If this cash flow is severed or significantly interrupted, insolvency can occur.

6. Continued

Yet the fact that a company is profitable is no assurance that its cash flow will be sufficient to maintain solvency. When a company has insufficient cash to pay its maturing obligations, it is insolvent. Then, even though the company is profitable, it may have too little cash to meet its obligations. The company will literally be "growing broke."

- (b) Describe the three main sources of information in evaluating the financial health of a company based on financial statements, and how they relate to each other.

Commentary on Question:

Candidates are required to list and describe the three financial statements, and explain how they relate to each other as shown in the picture below. If they are able to provide sufficient description or examples as to how three statements relate to each other, it is not necessary to draw the picture to receive full marks.

The majority of candidates were able to identify the three sources of information and provide a description of each. However, fewer candidates were able to provide a sufficient description of how the three statements are interrelated. Candidates who didn't fare well typically provided financial metrics (i.e. ROA, ROE, Profit Margin, etc.) as opposed to the financial statements.

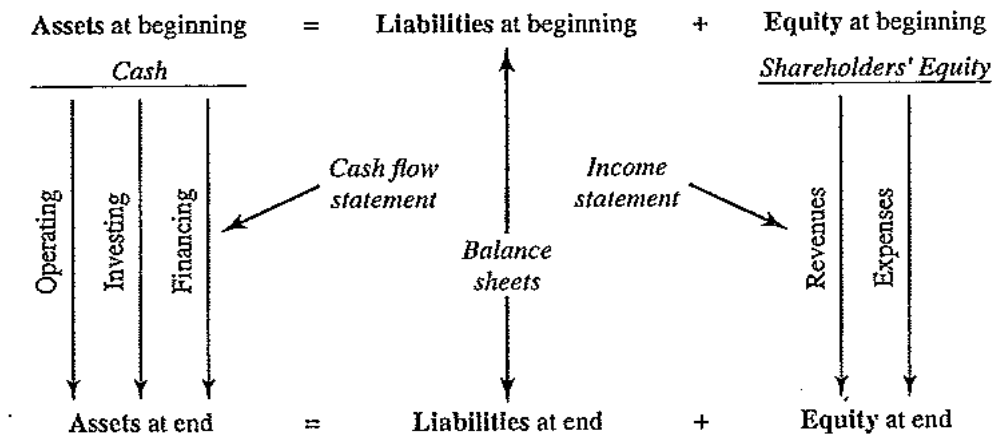
- A balance sheet is a financial snapshot, taken at a point in time, of all the assets the company owns and all the claims against those assets.
 - $\text{Assets} = \text{Liabilities} + \text{Shareholders' equity}$ (definitions of each item in the formula should be provided)

- Cash flow statement of a company shows principal sources and uses of cash through three activities:
 - Operating activities
 - Financing activities
 - Investing activities
 - It is easier to understand, provides more accurate information about certain activities, and it is used to evaluate firms' solvency by highlighting the extent to which operations are generating or consuming cash

- Income statement shows the extent to which net sales generated during the accounting period exceeded expenses incurred in producing the sales.
 - Formula: $\text{net sales} - \text{cost of goods sold} - \text{operating expenses} - \text{nonoperating expenses} - \text{taxes} = \text{net income}$
 - Earnings should also note concepts such as accrual accounting, depreciation and taxes

6. Continued

Ties among Financial Statements.



- While balance sheet shows the financials at a point in time, the cash flow and income statements show the movement between two dates.
- Examples of interrelation include:
 - Cash changes can affect various items in assets and liabilities (e.g. cash, accounts payable, accounts receivable)
 - Revenue/expense items from income statement can be shown as increases in cash, accounts receivable and accounts payable.
 - Net income from the income statement is used to determine the change in equity between balance sheets.

7. Learning Objectives:

3. The candidate will understand how to recommend an employee benefit strategy.
6. Evaluate the impact of regulation and taxation on companies and plan sponsors in Canada.

Learning Outcomes:

- (3c) Recommend an employee benefit strategy in light of an employer's objectives.
- (6b) Describe the major applicable laws and regulations and evaluate their impact.

Sources:

Canadian Handbook on Flexible Benefits, 3rd Ed, McKay, Chap 7, Sect 7.1-7.3/7.5-7.7
GHC-630-13: Taccess

Commentary on Question:

The question is attempting to test the Candidate's knowledge of the taxation system in Quebec as it relates to the different financial variables of an employee benefit program (premiums, claims, fees, expenses, etc.). In addition it attempts to test the Candidate's ability to recommend an employee benefit program based on the goals of the employer.

Solution:

- (a) Explain how taxes apply to premiums and claims and expenses under each of options 2 and 3 from the:
 - (i) Employer's point of view
 - (ii) Employee's point of view

Commentary on Question:

The goal is to show an understanding of which taxes apply to the different financial aspects of the employee benefit program (claims, fees, premiums). Most credit would be given if the differential between QTIP and QST are provided.

- (i) Employer's point of view
 - a) Option 2:
 - Premium tax must be paid on insured premiums
 - Provincial sales tax (QTIP) must be paid on premiums = 9%
 - HST does not apply as Quebec is non-participating
 - GST does not apply to insurance premium charged on group insurance = 5%

7. Continued

- b) Option 3:
- Premium tax – ASO plans must pay on claims and fees
 - Provincial sales tax (QTIP) – ASO plans without pooling must pay on claims = 9%
 - Provincial sales tax (QST) – ASO plans without pooling must pay on fees = 9.5%
 - HST not applicable as Quebec is non-participating
 - GST – ASO plans without pooling must pay on fees = 5%
- (ii) Employee's point of view
- c) Option 2:
- Provincial income tax – the insured premiums are taxable benefits to the employee at the provincial level
 - Federal income tax – the insured premiums are not taxable benefits to the employee at the federal level
- d) Option 3:
- Provincial income tax – the portion of the claims, fees and sales taxes paid by the employer are taxable benefits to the employee at the provincial level
 - Federal income tax – the claims, fees and sales taxes are not taxable benefits to the employee at the federal level
 - On their portion of the contribution to the cost, employees must pay:
 - Premium tax – on claims and fees
 - Provincial sales tax (QTIP) – on claims
 - Provincial sales tax (QST) – on fees
 - GST – on fees
- (b) Calculate the employer cost and employee value under each option. Show your work.

Commentary on Question:

Candidates needed to demonstrate knowledge of which taxes apply to the premium, claims, fees or taxes where applicable. Note, the question asks for Employer Cost and the question asks for Employee Value NOT Employee Cost.

7. Continued

- (i) Option 1:
- a) Employer cost
- Increase = \$1,500
 - Plus QPP contributions = $5.10\% \times \$1,500 = \76.50
 - Plus WSIB cost = $\$3 \times \$1,500 / 100 = \$45.00$
 - Plus Employer health tax = $4.26\% \times \$1,500 = \63.90
 - Total = $\$1,500 + \$76.50 + \$45.00 + \$63.90 = \$1,685$
- b) Employee net value
- Increase = \$1,500
 - Less QPP contributions = $5.10\% \times \$1,500 = \76.50
 - Less Federal income tax = $27.5\% \times \$1,500 = \412.50
 - Less Provincial income tax = $10\% \times \$1,500 = \150.00
 - Total = $\$1,500 - \$76.50 - \$412.50 - \$150 = \$861$
- (ii) Option 2:
- a) Employer cost
- Increase = \$1,200
 - Plus Provincial sales tax = $9\% \times \$1,500 = \108
 - Total = $\$1,200 + \$108 = \$1,308$
- b) Employee net value
- Increase = \$1,200
 - Less Provincial income tax = $10\% \times \$1,308 = \131
 - Total = $\$1,200 - \$131 = \$1,069$
- (iii) Option 3:
- a) Employer cost
- Increase = $80\% \times (\$1,600 + \$176) = \$1,421$
 - Plus Provincial sales tax = $80\% \times [(9\% \times \$1,600) + (9.5\% \times \$176) + (5\% \times \$176)] = \$136$
 - Total = $\$1,200 + \$108 = \$1,556$
- b) Employee net value
- Increase = $80\% \times (\$1,600 + \$176) = \$1,421$
 - Less Provincial income tax = $10\% \times \$1,556 = \156
 - Less Provincial sales tax (QTIP and QST) and GST = $20\% \times [(9\% \times \$1,600) + (9.5\% \times \$176) + (5\% \times \$176)] = \$34$
 - Total = $\$1,421 - \$156 - \$34 = \$1,231$

7. Continued

- (c) Explain the difference in results for each option under (b) and recommend an option to ACME. Justify your answer.

Commentary on Question:

Recommendation should be supported by calculations in Part (b). No credit give if recommend Option 1, but either Option 2 or Option 3 can be justified depending on which goal of the employer is prioritized as Option 2 minimizes employer cost but Option 3 maximizes employee value.

- (i) Option 1: is costly for the employer as it attracts all payroll taxes, the value for the employee is also reduced because it attracts personal taxes
- (ii) Option 2: is attractive for the employer as they are only responsible for the provincial sales tax and for the employee they are only impacted by provincial personal income tax
- (iii) Option 3: This option has moderately more tax for both the employer and employee as a results of taxes on ASO fees being higher than insured premium but has highest value to employee
- (iv) Recommendation: I recommend Option 2 as the percentage cost increase for the employer that results from taxes is minimized and at the same time the employee receives the highest percentage of the benefit after their tax requirements.

8. Learning Objectives:

4. The candidate will understand how to describe Government Programs providing Health and Disability Benefits in Canada.
6. Evaluate the impact of regulation and taxation on companies and plan sponsors in Canada.

Learning Outcomes:

- (4b) Describe how private group insurance plans work within the framework of social programs in Canada.
- (6a) Describe the regulatory and policy making process in Canada
- (6b) Describe the major applicable laws and regulations and evaluate their impact.

Sources:

GHC-608-13 Change to Quebec Generic Drug Pricing

GHC-608-13 Communique – Ontario Generic Drug Price Reform Finalized

Commentary on Question:

Part a) many candidates missed QC trailer clause which is a key provision.

Part b), some candidates didn't incorporate the maximum allowable assumptions.

Solution:

- (a) Critique InnovaDrug's proposal in the context of:
 - Pricing between Quebec and Ontario
 - Their generic pricing relative to brand pricing
 - Rebates
 1. QC requires generic pricing may not exceed the lowest price offered in another Canadian province.
 2. Both provinces require the generic pricing to be no more than 25% of brand, so current pricing is too high.
 3. Ontario does not allow rebates, so should not include in pricing
 4. Rebates in QC cannot exceed 15%, so it's too high
- (b) Calculate the total prescription price for Xerxes in both Quebec and Ontario using the maximum allowable assumptions under the public plans. Show your work.

8. Continued

Total Prescription Price
= (Brand Equivalent Pricing * Max allowed Generic %) *(1+Markup%) + Rebate
+ Dispensing fee

Ontario

Total Prescription Price = $(800 * 25\%) * (1 + 8\%) + \$0 + \$13.25 = 229.25$

Quebec

Total Prescription Price = $(750 * 25\%) * (1 + 10\%) + (750 * 25\%) * 15\% + \$15 = 249.38$

9. Learning Objectives:

2. The candidate will understand and recommend a manual rate for each of the coverages described in Learning Objective 1.

Learning Outcomes:

- (2d) Calculate and recommend a manual rate.

Sources:

Bluhm 6th Edition Chapter 32 – Estimating Claim Costs for Life Benefits

Commentary on Question:

The question tests candidates' knowledge of how manual claims rates are calculated for life insurance benefits, as well as making experience adjustments to the rates. In addition, candidates are tested on how to calculate credibility-weighted premiums.

Solution:

- (a) Calculate the manual claim rate per \$1,000 of coverage. Show your work.

Commentary on Question:

Candidates needed to show sufficient work to obtain full credit for this question. Intermediate steps such as calculating total benefit exposure and total monthly premium were required. Candidates must show the application of the reduction on insured amount for employees over age 65. Note that the retention should not be applied to the manual claim rate.

		(a)	(b)	(c) = 3 * (b)	(d)	(e) = (d)*(c)/1000	(f) = (e) * (a)
		Employees	Salary	Insured Amt	Monthly Rate	Expected Claims	Total Premium
30-40	M	70	65,000	195,000	0.16	\$ 31.20	\$ 2,184.00
30-40	F	82	67,000	201,000	0.08	\$ 16.08	\$ 1,318.56
40-50	M	35	120,000	360,000	0.2	\$ 72.00	\$ 2,520.00
40-50	F	55	118,000	354,000	0.1	\$ 35.40	\$ 1,947.00
50-60	M	6	167,000	501,000	0.4	\$ 200.40	\$ 1,202.40
70-80	F	3	170,000	382,500	0.5	\$ 191.25	\$ 573.75
Total							\$ 9,745.71

Total Benefit Exposure = $\Sigma (c)*(a) = \$66,355,500$

Average Expected Claims Rate = $\text{Totally Monthly premium} / \text{Total Benefit Exposure}$
 $= 0.1469$ per month per \$1000 of coverage

- (b) Calculate the experience rate per \$1,000 of coverage. Show your work.

9. Continued

Commentary on Question:

Note that the retention is not applied to the manual claim rate.

Annual Experience claims rate	70,000 = 350,000 / 5
Benefit Exposure	\$66,355,500 from part (a)
Annual Experience claims rate	\$1.055 = (70,000/\$66,355,500) x 1,000
Monthly Experience claims rate	\$0.088 = \$1.055 / 12

- (c) Calculate the credibility-weighted monthly premium. Show your work.

Commentary on Question:

This question required candidates to demonstrate their knowledge of credibility. In addition, the question asks for the monthly premium paid by Lombard Group. Most candidates applied the retention factor to calculate the credibility-weighted monthly premium rate, but failed to calculate the total monthly premium.

Credibility factor	53% = SQRT(5,529,625/20,000,000)
Credibility-weighted rate	\$0.115 = (\$0.088 x 53%)+(\$0.146 x (1-53%))
Monthly "Pure" premium	\$7,647.71 = (\$0.115/\$66,355,500) / 1,000
Retention of 5%	
Monthly premium	\$8,050.23 = \$7,647.71 / (1 - .05)

10. Learning Objectives:

2. The candidate will understand and recommend a manual rate for each of the coverages described in Learning Objective 1.

Learning Outcomes:

- (2d) Calculate and recommend a manual rate.
- (2f) .Describe the product development process including risks and opportunities to be considered during the process.

Sources:

Group Insurance, Bluhm, 6th Edition, Chapter 31: Pricing of Group Insurance

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Calculate the resulting annual rates for:
 - (i) A four-tier rating structure using the table above.
 - (ii) A two-tier rating structure where the second tier factor is 2.000.

Commentary on Question:

Well-prepared candidates recognized that they needed to calculate “effective members” by multiplying contracts by the tier factor. By dividing the total expected cost by the total effective members, the single tier factor is obtained, and the other tiers can be derived from it. A common error was to multiply members by the tier factor, and then proceeding with calculations.

- (i) Annual Rates Using a Four-Tier Rating Structure

Contracts * Tier Factor

S: 1,000 (1.00) = 1,000

C: 500 (2.10) = 1,050

PC: 200 (1.90) = 380

F: 300 (3.125) = 937.5

$1,000 + 1,050 + 380 + 937.5 = 3,367.5$ “members” based on tier factors under four-tier rating structure

$\$9,000,000 / 3,367.5 = \$2,672.61$ revenue per “member”

10. Continued

Revenue per “member” * Tier Factor = Annual Rate per contract (PCPY=
per contract per year)

S: \$2,672.61 (1.00) = \$2,672.61

C: \$2,672.61 (2.10) = \$5,612.47

PC: \$2,672.61 (1.90) = \$5,077.95

F: \$2,672.61 (3.125) = \$8,351.89

(ii) Annual Rates Using a Two-Tier Rating Structure

Contracts * Tier Factor

S: 1,000 (1.00) = 1,000

F: 1,000 (2.00) = 2,000

1,000 + 2,000 = 3,000 “members” based on tier factors under two-tier
rating structure

$\$9,000,000 / 3,000 = \$3,000$ revenue per “member”

Revenue per “member” * Tier Factor = Annual Rate per contract (PCPY=
per contract per year)

S: \$3,000 (1.00) = \$3,000

F: \$6,000 (2.00) = \$6,000

(b) Identify possible risks to the client associated with the change in tier structure.

Commentary on Question:

Well-prepared candidates answered the question as asked, namely, citing possible risks to the client that would be faced if the tier structure were changed as indicated. Such risks generally focused on cross-subsidies and the anti-selection they can engender, costs to the client arising from changes in enrollment patterns, and employee dissatisfaction/productivity. Common errors included making mere observations about the rate structure without taking the next step and identifying the risks (to the client) that the two-tier structure might foster.

Identify possible risks to the clients associated with the change in tier structure.

The company may want to achieve equity in its benefit plan design. Fewer tiers in the rating scheme could create cross-subsidies between smaller and larger families which may not achieve the equity that meets company goals.

If some families opt out because of cross-subsidies, then productivity may decrease if they don't have coverage. Meeting the employees' needs for coverage reduces the chance of missed work days or distracted work time.

10. Continued

If contributions are a percent of the total rate by tier, then Singles, Couples, and Parents with Child(ren) would see increases in the amount they would have to pay for coverage. This could cause problems with morale since these employees will be losers under the new plan.

There could be antiselection: if it is the same cost for a family of four as it is for a family of three, then the smaller family may opt out because they are subsidizing the larger family (all else equal). Families that do not opt out may have a higher chance of being bad risks and overall costs could increase (assuming employee contributes a part of their cost).

11. Learning Objectives:

3. Evaluate and recommend an employee benefit strategy.

Learning Outcomes:

- (3a) Evaluate and recommend an employee benefit strategy in light of an employer's objectives

Sources:

Taccess, page 4

Canadian Handbook of Flexible Benefits, Ch 14

Commentary on Question:

Generally, candidates – from the U.S. and Canada – did better with parts A through C, but struggled with the calculations required in part D, in many cases not attempting the question at all. Furthermore, many candidates did not state their assumptions made in respect of taxes that apply or do not apply; however, a correctly answered part A and part D without any reference to taxes was awarded near full marks.

Solution:

- (a) Calculate the expected company savings achieved with the proposed plan design, assuming that premiums under the current plan exactly cover claims and applicable expenses and premium taxes.

Plan costs under current design:

$$\text{Paid Claims} = \$2,500 * 25\% * 600 + \$6,000 * 75\% * 600 = \$3,075,000$$

$$\text{Paid Premiums} = \$3,075,000 / (1 - 6.5\% - 2.0\%) = \$3,360,660$$

Therefore, company costs under current design are **\$3,360,660**

Plan costs under proposed design:

$$\text{Paid Claims} = \$2,000 * 25\% * 600 + \$4,800 * 75\% * 600 = \$2,460,000$$

$$\text{Admin Expenses} = 6.0\% * 2,460,000 = \$147,600$$

$$\text{GST} = 5\% * \$147,600 = \$7,380$$

$$\text{Therefore, company costs under proposed design are: } \$2,460,000 + \$147,600 + \$7,380 = \$2,614,980$$

$$\text{Savings} = \$3,360,660 - \$2,614,980 = \$745,680$$

11. Continued

(b)

- (i) *(1 point)* List and describe the four pricing objectives employers frequently want to achieve with their flexible benefit pricing structure.
- (ii) *(1 point)* List and describe the various flexible benefit pricing structures available.

- (i) Objective 1: Realistic price tags
Price tags should reflect the cost as if everyone only that one option was being offered.

Objective 2: Equity

Each employee should receive an equal dollar amount or percentage of pay in credits or employer subsidies.

Objective 3: No losers

Employees should be able to repurchase their current coverage (or most comparable coverage) with no increase in costs.

Objective 4: No additional company cost

The new flex plan should be cost-neutral compared with the projected costs of the current plan.

- (ii) Pricing structures fall into three categories
- Flat-credit structures
 - Buy-back structures
 - Election-based structures

Flat-credit structures:

Gives all employees the same amount of flex credits, which are typically equal to the Single costs (which saves the employer money, and creates losers), Family costs (which costs the employer money, but creates no losers), or Average costs (which is cost-neutral, but may create losers).

Buy-back structures:

To ensure there are no losers, the employer gives enough credits to allow everyone – whether Single or Family – to buy-back their previous coverage at no additional costs. While no losers are created, there are equity concerns as the employer is giving families more credits for the simple fact that they are a family.

Election-based structures:

This type of structure varies the amount of flex credits by option to ensure that, on a net basis, the plan is equitable.

11. Continued

- (c) Describe drivers of adverse selection and potential mitigation strategies.

Two Drivers of Adverse Selection

Predictability of occurrence

Availability of choice

Changes to limit Adverse Selection

- Limit frequency of choice to every two or three years, instead of every year.
- Minimize the spread between the options. There is a large spread in the two options currently.
- Test the program with employees.
- Incorporate expected adverse selection into price tags or credits.

- (d)

- (i) (1 point) Calculate single and family price tags for the Bronze, Silver and Gold options. Justify your decision and show your work.
- (ii) (5 points) Calculate the total company costs under each pricing structure identified in part (b), and identify which pricing objectives are achieved. State any assumptions made and show your work.
- (iii) (2 points) Draft an email to the CEO recommending whether Bits n' Bytes should adopt the flexible benefits plan. Justify your position.

Commentary on Question:

Note: for all pricing scenarios, expected claims and price tags received are the same.

- (i)

	Relative Value	Costs before Adverse Selection	Costs Reflecting Adverse Selection	Realistic Price Tag
Bronze (single)	100%	\$2,126	\$1,913	\$2,126
Silver (single)	130%	\$2,764	\$3,040	\$2,764
Gold (single)	160%	\$3,402	\$3,912	\$3,402

The price tag should reflect company costs. The Bronze price tag should then be:
 $= \$2,000 + 6.0\% * \$2,000$ (administrative expense) $+ 5.0\% * \$2,000$ (GST)
 $= \$2,126$

11. Continued

The actual cost would be 90% of this, due to antiselection. However, the realistic price tags are set assuming that everyone in the group is in that particular option.

The Silver and Gold costs would be:

$$\$2,126 * 1.3 = \$2,764$$

$$\$2,126 * 1.6 = \$3,402$$

The family price tags would simply be set at 2.4 times the single.

(ii) Company costs = expected claims + flex credits given - price tags received

Expected claims costs after adverse selection from (d) i:

$$\begin{aligned} &60\% * (\$1,913 * 25\% * 600 + \$4,591 * 75\% * 600) \\ &+ 30\% * (\$3,040 * 25\% * 600 + \$7,296 * 75\% * 600) \\ &+ 10\% * (\$3,912 * 25\% * 600 + \$9,389 * 75\% * 600) \\ &= \$1,411,740 + \$1,121,760 + \$481,190 \\ &= \$3,014,690 \end{aligned}$$

Realistic price tags received from (d) i:

$$\begin{aligned} &60\% * (\$2,126 * 25\% * 600 + \$5,102 * 75\% * 600) \\ &+ 30\% * (\$2,764 * 25\% * 600 + \$6,634 * 75\% * 600) \\ &+ 10\% * (\$3,402 * 25\% * 600 + \$8,165 * 75\% * 600) \\ &= \$1,568,880 + \$1,019,970 + \$418,460 \\ &= \$3,007,310 \end{aligned}$$

Flat credit structures

Single credits:

		Price Tag	Credit	EE Cost
Bronze	Single	\$2,126	\$2,126	\$0
(proposed)	Family	\$5,102	\$2,126	\$2,976
Silver	Single	\$2,764	\$2,126	\$638
	Family	\$6,634	\$2,126	\$4,508
Gold	Single	\$3,402	\$2,126	\$1,276
	Family	\$8,165	\$2,126	\$6,039

Flex Credits given:

$$\$2,126 * 600 = \$1,275,600$$

$$\text{Total costs} = \$3,014,690 + 1,275,600 - 3,007,310 = \$1,282,980$$

11. Continued

Which objectives are achieved?

Objective 1: Realistic prices? YES

Objective 2: Equity? YES

Objective 3: No losers? NO – even if tag set at \$2,126, then realistic pricing is not maintained

Objective 4: No additional company cost? YES

Family credits

		Price Tag	Credit	EE Cost
Bronze	Single	\$2,126	\$5,102	(\$2,976)
(proposed)	Family	\$5,102	\$5,102	\$0
Silver	Single	\$2,764	\$5,102	(\$2,338)
	Family	\$6,634	\$5,102	\$1,532
Gold	Single	\$3,402	\$5,102	(\$1,700)
	Family	\$8,165	\$5,102	\$3,063

Flex Credits given:

$$\$5,102 * 600 = \$3,061,200$$

$$\text{Total costs} = \$3,014,690 + 3,061,200 - 3,007,310 = \$3,068,580$$

Which objectives are achieved?

Objective 1: Realistic prices? YES

Objective 2: Equity? YES

Objective 3: No losers? YES

Objective 4: No additional company cost? NO

Average credits

		Price Tag	Credit	EE Cost
Bronze	Single	\$2,126	\$4,358	(\$2,232)
(proposed)	Family	\$5,102	\$4,358	\$744
Silver	Single	\$2,764	\$4,358	(\$1,594)
	Family	\$6,634	\$4,358	\$2,276
Gold	Single	\$3,402	\$4,358	(\$956)
	Family	\$8,165	\$4,358	\$3,807

Flex Credits given:

$$\$4,358 * 600 = \$2,614,800$$

$$\text{Total costs} = \$3,014,690 + 2,614,800 - 3,007,310 = \$2,622,180$$

11. Continued

Which objectives are achieved?

Objective 1: Realistic prices? YES

Objective 2: Equity? YES

Objective 3: No losers? NO – and if price tag is reduced to \$4,358, then realistic pricing is not achieved

Objective 4: No additional company cost? NO! (due to antiselection effects)

Buy-back pricing structure

		Price Tag	Credit	EE Cost
Bronze (proposed)	Single	\$2,126	\$2,126	\$0
	Family	\$5,102	\$5,102	\$0
Silver	Single	\$2,764	\$2,126	\$638
	Family	\$6,634	\$5,102	\$1,532
Gold	Single	\$3,402	\$2,126	\$1,276
	Family	\$8,165	\$5,102	\$3,063

Flex Credits given:

$$\$2,126 * 600 * 25\% + \$5,102 * 600 * 75\% = \$2,614,800$$

$$\text{Total costs} = \$3,014,690 + 2,614,800 - 3,007,310 = \$2,622,180$$

Which objectives are achieved?

Objective 1: Realistic prices? YES

Objective 2: Equity? NO – families get more credits

Objective 3: No losers? YES

Objective 4: No additional company cost? NO! (because of antiselection effects)

Election-based pricing structure

		Price Tag	Credit	EE Cost
Bronze (proposed)	Single	\$2,126	\$2,126	\$0
	Family	\$5,102	\$5,102	\$0
Silver	Single	\$2,764	\$2,126	\$638
	Family	\$6,634	\$5,996	\$638
Gold	Single	\$3,402	\$2,126	\$1,276
	Family	\$8,165	\$6,889	\$1,276

Flex Credits given:

$$\begin{aligned} &60\% * (\$2,126 * 600 * 25\% + \$5,102 * 600 * 75\%) \\ &+ 30\% * (\$2,126 * 600 * 25\% + \$5,996 * 600 * 75\%) \\ &+ 10\% * (\$2,126 * 600 * 25\% + \$6,889 * 600 * 75\%) \\ &= \$1,568,880 + \$905,130 + \$341,900 \\ &= \$2,815,910 \end{aligned}$$

$$\text{Total costs} = \$3,014,690 + 2,815,910 - 3,007,310 = \$2,823,290$$

11. Continued

What objectives are achieved?

Objective 1: Realistic prices? YES

Objective 2: Equity? YES – on a net basis

Objective 3: No losers? YES

Objective 4: No additional company cost? NO

(iii)

Dear CEO:

The purpose of this email is to provide you with my recommendations with respect to adopting a flexible benefits program. Flexible benefits are under consideration, as there are some employees who would be worse off under the proposed plan design on its own.

Your stated objectives in adopting a flexible benefits program are:

1. No losers among the employees (i.e. employees should be able to elect the basic plan design with no additional out-of-pocket costs)
2. Equitable credits (i.e. Single members and Family members should receive the same amount of credits)
3. Cost increase of no more than 10%

The suggested pricing structure is the “election-based” structure, where Single members and Family members are out-of-pocket the same amount on a net basis, even though Families would require more credits. This structure creates no losers, as employees electing Bronze coverage would not be out-of-pocket.

Furthermore, the “election-based” structure is expected to increase costs by approximately 8%, which is within your stated 10% threshold. For completeness:

The current plan design is expected to cost: \$336,066

The proposed plan design is expected to cost: \$261,498

The flexible benefits plan design is expected to cost: \$282,329

It should be noted that there is another structure which also creates no losers and is equitable, but it would require the company to provide credits equal to Family costs, and is therefore outside your stated 10% threshold.

12. Learning Objectives:

1. The candidate will understand how to describe plan provisions typically offered under:
 - a. Group and individual medical, dental and pharmacy plans
 - b. Group and individual long-term disability plans
 - c. Group short-term disability plans
 - d. Supplementary plans, like Medicare Supplement
 - e. Group and Individual Long Term Care Insurance

Learning Outcomes:

- (1a) Describe typical organizations offering these coverages including the historical context.

Sources:

SOA Pharmacy Study Note pp3-4, Bluhm Ch.9 pp139-140, Pricing examples in SOA study note.

Commentary on Question:

Candidates generally did well on parts C and D (calculation components of the question). Generally candidates did not do as well when explaining/defining the concepts of AWP and WAC. Candidates also did a solid job of describing the PBM responsibilities/tasks required in part B of the question.

Solution:

- (a) Describe Wholesale Acquisition Cost (WAC) and Average Wholesale Price (AWP) and explain how each is used to set drug prices.
 - AWP is based on data from manufacturers, distributors, and other suppliers, but not an average or based on any actual price.
 - WAC required to be 80% of MAC in the US
- (b) Describe typical tasks that a PBM performs for an insurance company.
 - a) Handle administrative and clerical tasks related to adjudication and management
 - b) Pricing negotiations,
 - c) provide mail order services
 - d) Plan design (formulary development)
 - e) Rebates

12. Continued

- (c) Calculate the WAC for this prescription. Show your work.

Member pays \$80 = 20% of drug cost

Drug cost = \$400 = Ingredient Cost + Disp Fee (2 pts)

Ingredient Cost = \$400 - \$0.80 = \$399.2 (2 pts)

AWP = Ingredient Cost / [1-discount] = \$399.2 / [.86] = \$464.19 (2 pts)

WAC = 80% Ingredient Cost = 80% * \$464.19 = \$371.35 (2 pts)

- (d)

(i) Determine THE's total drug cost for pharmacy benefits in 2013. Show your work.

(ii) Determine whether the new proposal results in a lower expected drug cost than the current PBM arrangement, based on 2013 utilization data. Show your work.

(i) Brand Cost = $\$350 \times 40,000 \times (1 - .14) + 0.8 \times 40,000$
= 12,040,000 + 32,000 = \$12,072,000
Generic Cost = $\$100 \times 90,000 \times (1 - .75) + 90,000 \times 0.8$
= 2,250,000 + 72,000 = \$2,322,000
Total cost = \$14,394,000

(ii) Brand Cost = $\$350 \times 40,000 \times (1 - .16) + 0.1 \times 40,000$
= 11,760,000 + 4,000 = \$11,764,000
Generic Cost = $\$100 \times 90,000 \times (1 - .76) + 90,000 \times 2.5$
= 2,160,000 + 225,000 = \$2,385,000
Total cost = \$14,149,000

13. Learning Objectives:

2. The candidate will understand and recommend a manual rate for each of the coverages described in Learning Objective 1.

Learning Outcomes:

- (2c) Calculate and recommend assumptions.

Sources:

Group Insurance 6th Edition, Chapter 38

Commentary on Question:

In general candidates did well on the first section of the question and had mixed results for the second section of the question. Please see section specific comments.

Solution:

- (a)
- (i) Describe components of medical trend which you can influence to offset the 7% provider contracting increase.
 - (ii) Describe other components that you cannot influence which could impact medical trend.

Commentary on Question:

The majority of candidates did well on this question. To receive full credit supporting statement(s) were required around how the component listed impacted trend.

- (i)
- Utilization management (such as disease management programs to monitor and coach members with certain conditions)
 - Benefit design (such as increased cost shares to impact member utilization)
- (ii)
- General macro-economic conditions (such as inflation, population wealth)
 - Random fluctuations (such as a high flu season)
 - Legislation (mandated benefits)
- (b)
- (i) Explain issues with this approach.
 - (ii) Propose three alternate strategies assuming NNG would consider taking on additional risk. Justify your response.

13. Continued

Commentary on Question:

(i) Candidate performance varied on this part of the question with many candidates not providing enough issues and explanations for full credit.

(ii) Candidate performance varied on this part of the question with many candidates not providing enough rationale for their recommended strategy for full credit. Some candidates confused the perspective of the question and answered on behalf of NNG rather than the insurance company.

(i)

- Network viability – hospital may leave network
- Code creep/utilizing more services to make up for lost revenue
- Different population – maternity and pediatric reimbursement

(ii)

- Capitation – the hospital receives a flat fee and assumes utilization risk
- Bonus with withhold - hospital paid a lower reimbursement up front and is given a bonus tied to quality incentives
- DRG – fixed charge per admission based on severity of condition, hospital at risk for higher costs associated with the course of care for the admission

14. Learning Objectives:

1. The candidate will understand how to describe plan provisions typically offered under:
 - a. Group and individual medical, dental and pharmacy plans
 - b. Group and individual long-term disability plans
 - c. Group short-term disability plans
 - d. Supplementary plans, like Medicare Supplement
 - e. Group and Individual Long Term Care Insurance

Learning Outcomes:

- (1c) Describe each of the coverages listed above.
- (1d) Evaluate the potential financial, legal and moral risks associated with each coverage.

Sources:

Group Insurance, 6th edition, Chapter 10

Commentary on Question:

This question is list and describe question that is testing the candidates' knowledge of basic group long term care insurance plans, their provisions and risks associated with them. In general, candidates did well on understanding the plan types and inflationary protection, but did not appropriately recall the selection risks associated with this type of insurance product.

Solution:

- (a) Describe the types of GLTCI plans that are available for purchase.

Commentary on Question:

Most candidates got full credit for this question, as it was very straight forward. Candidates who only named the items, but did not include a description were given partial credit

- 1.) Service Reimbursement (reimburse after benefit trigger and waiting period are satisfied)
 - 2.) Service Indemnity model – fixed benefit payment made for any day or week that services are received once benefit trigger and waiting period are satisfied.
 - 3.) Disability or cash model: fixed benefit payment made for any day or week that benefit trigger and waiting period are satisfied
- (b) List ways to limit anti-selection in the enrollment for GLTCI plans.

14. Continued

Commentary on Question:

Generally speaking, candidates did not score well on this question. Often basic underwriting methodologies for reducing anti-selection were listed, but candidates were not given credit for items that were not specific to GLTI.

1. Actively at work on full time basis
 - a. Underwrite any other class of employee and/or dependent
 2. Limit enrollment period to a set time each year
 3. If want to enroll outside of open enrollment, submit evidence of insurability
 4. If not full time actively at work, lengthy health questionnaire
 - a. Get health-related information directly from physician
- (c) Explain the features the Giant Group can use to provide the current policyholders with inflation protection.

Commentary on Question:

Generally, candidates did very well on this question, providing both the feature and a description of the feature.

- a. Periodic Increase offers – periodic offering to employees for increases in coverage on a guaranteed issue basis
- b. Automatic Inflation Protection – plan provision that provides automatic increases in benefits without employee interjection. This can be done via two methods:
 - 1.) Simple inflation protection – benefit payments are increased using simple interest.
 - 2.) Compound inflation protection – benefit payments are increased using compound interest.

15. Learning Objectives:

2. Calculate and recommend a manual rate for each of the coverages described in Learning Objective 1

Learning Outcomes:

- (2a) Identify and evaluate sources of data needed for pricing, including the quality, appropriateness and limitations of each data source

Sources:

Bluhm, Chapter 31

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Outline the advantages and disadvantages of using internal vs. external sources of data when considering data for how to charge expenses for a given policy.

Commentary on Question:

Most candidates were successful in identifying the impact of credibility and accuracy, or lack thereof, of using external vs. internal data. Advantages specific to the use of internal functional cost studies and external market drivers were frequently overlooked.

- Internal data shows what is needed to cover the company operating costs.
- Internal data is specific to actual company experience and often driven by expense treatment in the financial statement or tax calculations; provides a better definition of what is required.
- Internal data allows for the use of functional cost studies to measure resources required for each function.
- Internal data allows for the use of functional cost studies to measure resources required for each category (group size, coverage, line of business).
- External data shows what the market demands.
- External data could include studies from industry associations, surveys, competitive feedback (primarily based on quotes or state rate filings); caution in comparing as data may not be defined the same way.
- Caution in comparing internal data with other companies as there may be distortions because of differences in how companies define and account for expenses.
- External data may not be accurate.
- External data may provide more credibility than internal data based on volume and appropriateness to the line of business.

15. Continued

- (b) Your company's strategy is to increase the small group block of business. You have agreed to the approach of realigning the commission structure to achieve this strategy. Explain the items that need to be considered.

Commentary on Question:

Most candidates were successful in identifying various commission distribution methods, profitability impact and market drivers. Other items to consider for realigning the commission structure were frequently overlooked.

- Distribution Channel: usually agents or brokers are compensated via a commission, some are salaried or a combination of salaried and commissions.
 - May have commission overrides
 - Commissions should reflect the services being performed; the value depends on
 - Complexity of services
 - General payment practices among other companies' brokers
 - Client 's willingness to pay
 - Competitive Environment
 - Compensation to distribution channel:
 - Percent of premiums
 - Based on group size
 - Based on sliding premium scale
 - Flat dollar amount per member, here, commissions do not vary directly with premiums.
 - Composition of the commission: first year incentives, and renewal bonuses
 - Special bonuses are given as incentives if salaried representatives or brokers; bonuses can be based on persistency, volume, types of groups sold, other measures aligning with company's goals.
 - Expenses other than sales expenses, i-e advertising and promotional either directly attributed to the product or attributable to the promotion of the company in general
 - Rules to ensure that brokers and agents do not re-issue policies and 'switch' clients to gain high first year commissions
 - Overall profitability impact
- (c) Identify the common state and federal taxes/fees that must be accounted for when a policy is priced.

Commentary on Question:

Most candidates were successful in identifying premium and income tax as well as the ACA tax. Candidates frequently overlooked the high risk pool surcharge.

15. Continued

- ACA tax
 - i. (Federal assessment tax), allocated through products and customers of the company
 - ii. (Federal): comparative effectiveness research assessment, supports the non-profit Patient-Centered Outcomes research Institute (PCORI) and is used to identify and conduct research to compare the clinical effectiveness of medical treatments.
- Premium tax (state): in pricing, either based on average premium tax charges over the states or reflecting each state's exact premium tax rate
- Federal and State income tax; common percentage of premiums across all products, or allocations based on pre-tax operating results of each product or product segment.
- High risk pool surcharge (state): provides insurance to those who were denied from all other sources. Partially subsidized by certain product lines, assessments are in line with the volume across the carriers doing business in the state.