Practice Education Course – Group Benefits Practice Area
Exam – May 2017

This exam consists of fifteen (15) multiple choice questions worth 12 points and five (5) written answer questions worth 27 points for a total of 39 points.

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SECTION 1: MULTIPLE CHOICE/GRID QUESTIONS

Each of the 15 multiple choice questions are worth 0.8 points for a total of 12 points. Circle the right answer on the multiple-choice question answer sheet.

Question 1  You are given the following data regarding prescription drugs:

<table>
<thead>
<tr>
<th>Medication</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Price</td>
<td>% of all prescriptions</td>
</tr>
<tr>
<td>A</td>
<td>$20.00</td>
<td>50%</td>
</tr>
<tr>
<td>B</td>
<td>$40.00</td>
<td>30%</td>
</tr>
<tr>
<td>C</td>
<td>$80.00</td>
<td>15%</td>
</tr>
<tr>
<td>D</td>
<td>$120.00</td>
<td>5%</td>
</tr>
</tbody>
</table>

Based on these data, what should you do with your manual prescription drug rates, all other things being equal?

A. Reduce by 10%
B. Status Quo
C. Increase by 4%
D. Increase by 8%
E. Increase by 12%

Question 2  You are given the following information about three employees of Hydroponic Cultures Inc.:

<table>
<thead>
<tr>
<th>Employee</th>
<th>Province of Residence</th>
<th>Date of disablement</th>
<th>Cause of disability</th>
<th>Date of Death</th>
<th>Cause of Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Doe</td>
<td>Ontario</td>
<td>May 12, 2016</td>
<td>Heart Attack</td>
<td>August 5, 2016</td>
<td>Car accident</td>
</tr>
<tr>
<td>Joseph Bleau</td>
<td>Québec</td>
<td>March 17, 2016</td>
<td>Cancer</td>
<td>July 16, 2016</td>
<td>Cancer (same as cause of disability)</td>
</tr>
<tr>
<td>Jane Grey</td>
<td>Québec</td>
<td>April 23, 2016</td>
<td>Neurosis</td>
<td>October 5, 2016</td>
<td>Car accident</td>
</tr>
</tbody>
</table>

Hydroponic Cultures Inc. offers life insurance to its employees, with waiver of premiums after a 6-month elimination period. Until June 30, 2016, the insurer was ABC Life Ins. Co. From July 1, 2016 on, the insurer is XYZ Lifeco. Who pays the death benefits?

A. ABC pays all three death benefits
B. XYZ pays all three death benefits
C. ABC pays for Joseph Bleau; XYZ pays for John Doe and Jane Grey
D. ABC pays for Joseph Bleau and Jane Grey; XYZ pays for John Doe
E. None of A, B, C or D is correct
Question 3  The March 2016 federal budget announced changes to Employment Insurance rules, including a reduction in the waiting period for benefits from two weeks to one week effective January 1, 2017. This change will impact other employer-sponsored benefits. Which of the following statements are TRUE?

I. The cost of supplementary unemployment benefit (SUB) plans may reduce as long as the plan text references the EI waiting period, rather than a fixed period.
II. The cost of a 17-week maternity leave top up program will reduce.
III. The cost of a 26-week short term disability plan will increase.

A. I and II
B. I and III
C. II and III
D. I, II and III
E. None of A., B., C., or D. is correct

Question 4  What is the correct sequence for risk sharing of high cost drug pooling outside of Québec?

A. Plan Sponsor → Insurer → Insurer/CDIPC Shared → Insurer
B. Plan Sponsor → Insurer → CDIPC → Insurer
C. Insurer → Insurer/CDIPC Shared → Insurer → Plan Sponsor
D. Insurer → CDIPC → Insurer → Plan Sponsor
Question 5  An Ontario-based employer offers its employees group coverage including life insurance and health. The health benefits are funded using a pure ASO arrangement. There are no commissions. The applicable tax rates in Ontario are:

I. 2% premium tax
II. 8% RST
III. 5% GST
IV. 13% HST

How will the above taxes be applied to the client’s invoice?

A. Premium tax and HST will be charged on the life premiums, claims paid, and applicable fees for administering the plan.
B. HST will be charged on the life premiums and administration fees.
C. RST will be charged on the life premiums and health claims, premium tax will be charged in the life premiums and on health claims and administration fees, HST will be charged on the administration fees and premium taxes related to the health plan.
D. RST will be charged on the life premiums, health claims, and administration fees.

Question 6  Among the following statements, which are good reasons to explain why a two-tiered formula (such as 60% up to YMPE and 40% of the excess of salary over YMPE) is often used for a non-taxable disability income benefit?

I. This type of formula recognizes the fact that the marginal tax rate increases with salary.
II. We do not want to pay premiums on any portion of the insurance amount to which the employee would not be entitled if he/she became disabled.
III. We want to avoid the situation where the benefit formula would generate an income higher than the limit (such as 85% of net pre-disability earnings) over which the insurer limits the disability benefits.

A. I and II
B. I and III
C. II and III
D. I, II and III
E. None of A., B., C., or D) is correct
Question 7  
Regarding pure self-insurance, which of the following statements are TRUE?

I. The true cost of the plan is known only at the end of the year.
II. It is possible to have a self-insured non-taxable disability income plan.
III. Benefits promised to employees are not guaranteed if the employer goes bankrupt.

A. I and II  
B. I and III  
C. II and III  
D. I, II and III  
E. None of A., B., C., or D) is correct

Question 8  
Regarding taxes applicable to group insurance premiums in the Province of Quebec, which of the following statements are TRUE?

I. The 9% tax paid by the employer on a group insurance premium that constitutes a taxable benefit must be included in the calculation of the taxable benefit.
II. The 0.48% compensatory tax is calculated on the same premiums as the 3% tax on insurance premiums.
III. The 9% tax is a multi-level value added tax that allows the employer to receive input tax credits.

A. I and II  
B. I and III  
C. II and III  
D. I, II and III  
E. None of A., B., C., or D) is correct
Question 9  Regarding Workers’ Compensation funding, which of the following statements are TRUE?

I. Only employees working for government or public agencies or Crown corporations are permitted to contribute to the cost of Workers’ Compensation assessments.

II. The majority of companies in Canada are assessed on the basis of collective liability – employers in similar industries with similar risks pay the same assessment rates.

III. Provinces offer experience rating programs to encourage employers to participate in accident prevention and early return to work initiatives.

A. I and II
B. I and III
C. II and III
D. I, II and III
E. None of A., B., C., or D) is correct

Question 10  Concerning the last Group Long Term Disability Termination Study published by the CIA in October 2011, which of the following statements are TRUE?

I. The study does not include ASO claims and claims with an own occupation definition or elimination periods of more than two years.

II. The study presents different termination tables for Québec and outside of Québec. Compared to the CIA 1988-1997 table, the recovery rates are in general higher in Québec and in general lower for non-Québec claims.

III. Recurrent claims from the same insured for two different periods of disability were always considered as two different claims.

IV. The mortality tables resulting from the study do not show a significantly different mortality between disabled lives and general population according to Statistics Canada data.

V. Each recovery table (Québec and non-Québec) was developed excluding the excess terminations at the change in definition point (thus producing base rates) and shown a separate decrement related only to the change in definition. The adjustment (change in definition rate) could then be added to the base rate to produce a working table.

A. II, III and IV
B. All but III
C. II and V
D. I, II and V
E. All but V
Question 11  Which of the following statements are FALSE regarding our Standards of Practice to establish valuation reserves?

I. Concerning non-economic assumptions, if the assumption concerning adverse deviations is not specified directly in the Standards of Practice, the margin for adverse deviations should be selected between 5% and 20% (or -5% to -20%).

II. The rate of inflation should be determined for all the interest rate scenarios and should not vary for each scenario.

III. The best estimate assumption for expenses should account for expenses related to relevant policies and their supporting assets only. It should exclude overhead expenses.

IV. Investment expenses should not include external expenses.

V. Actuaries could include mortality improvement in their best estimate mortality projections.

A. II only  
B. III and IV  
C. II, III and IV  
D. All but I  
E. All

Question 12  ABC Insurance Co is based in Québec. To which of the following documents is ABC legally required to adhere when conducting business in Québec?

I. Uniform Life Insurance Act  
II. Québec Civil Code  
III. PIPEDA  
IV. CLHIA Guidelines  

A. All of the above  
B. II and III only  
C. I, II, and III only  
D. None of the above
Question 13  Jane lives in Alberta and has a policy that pays a benefit in the event of death by accidental means with no exclusion clauses. Jane is a seasoned athlete, but dies of a heart attack while running in a marathon. The insurance company that issued the policy has denied the claim on the grounds that her death is not the result of an accident.

Based on the Martin decision by the Supreme Court of Canada...

A. The insurance company is incorrect. There is no difference between accidental death and death by accidental means.
B. The insurance company is correct. Jane intended to participate in the marathon and therefore the death was not an accident.
C. The Supreme Court of Canada is still deciding this case.
D. The Martin decision does not apply to policies in Alberta.

Question 14  Which of the following statements are TRUE regarding the selection of methods and assumptions for developing cash flows to produce policy liabilities for valuation purposes?

I. Even if the group contract stipulates that the disability benefit will be reduced by the amount of any benefits from government plans (e.g., CPP/QPP), it is not appropriate to project any reduction in the cash flows until the claim has been approved by the government plan.
II. Since the standard deviation of later duration termination rates is significantly higher than early duration, it may be appropriate to increase MfAD with increasing claim duration.
III. No specific assumptions should be used for claims in appeal versus standard active claims in payment.
IV. While developing IBNR methods and assumptions, factors including disruptions in the postal services, severe weather conditions, seasonal variations and inflation must be taken in account.
V. Provision for recurrence of disability is often included in the IBNR reserve and calculation.

A. All but I
B. All but III
C. II, IV and V
D. I, II and IV
E. All
Question 15  With respect to Life Insurance Capital Adequacy Test (LICAT), which of the following statements are TRUE?

I. The base solvency buffer used in the LICAT ratios is calculated gross of registered reinsurance.

II. The supervisory target core ratio for LICAT is 70% and the supervisory target total ratio is 100%.

III. For insurance risk solvency buffer calculation, an insurer, for Group contracts with a premium rate guarantee period of less than 12 months, may opt to project cash flows for a full year and apply a reduced factor equal to 75% to determine the solvency buffer requirements.

IV. For Group disabled LTD, the capital requirement for level risk is calculated as the difference between the present value of shocked cash flows and the present value of best estimate cash flows.

V. Required capital for morbidity risk may be adjusted downwards for companies with a large volume of morbidity risk.

A. All but I
B. All but II
C. All but III
D. All but IV
E. All
SECTION 2: WRITTEN ANSWER QUESTIONS

Answer 5 mandatory questions:

Each of the mandatory questions (Total of **27 Points**)

- 16  5 points
- 17  5 points
- 18  5 points
- 19  6 points
- 20  6 points
Question 16

ACME is a large U.S.-based company with plans to expand into Canada. The company is planning on opening an office in Ontario with fewer than 10 employees. The CEO offered his thoughts on providing health coverage to the Canadian employees:

“I know all Canadians have the same health care provided through the federal government, so I suppose there’s no need for us to cover our new employees under our private plan; however, we could have a plan that covers basically the same services as those provided by the public healthcare program so that our employees would avoid long waiting lines.”

A. Critique the CEO’s assertion of public and private health insurance in Canada.

B. Explain whether or not an ASO funding arrangement would be appropriate for the Canadian plan.

C. Assess the tax implications to the employees of this approach.

D. Describe the advantages and disadvantages of providing a Health Care Spending Account instead of a typical health insurance plan.
Question 17

You are the group benefit consultant for Luxe Lederhosen. The Global VP HR, based in Munich, Germany, has requested that you educate him on the Canadian context of group disability programs and workers’ compensation benefits. You have decided to prepare a document that compares and contrasts those two programs, from a plan sponsor, as well as an employee’s point of view.

Outline your document.
**Question 18**

XYZ has grown from a small company with 80 employees to 4,350 employees over the past 12 years, now with locations in multiple provinces. In order to attract and retain employees, Company XYZ engaged your actuarial consulting services to manage their employee benefits program.

XYZ currently offers a full benefits package including Basic Life, Optional Life, Accidental Death and Dismemberment (AD&D), Optional AD&D, Short Term Disability (STD), Long Term Disability (LTD), Extended Health Care, and Dental.

All benefits are fully insured with premiums fully paid by Company XYZ.

Company XYZ experienced financial challenges recently and is looking to reduce operating cost wherever possible. In an annual strategy meeting, you presented a number of potential changes that will likely reduce program costs. After the meeting, the CFO of Company XYZ asked you to provide clarification on the following:

A. You mentioned that the current LTD plan design does not integrate with other sources of disability income. What is the objective to integrate with other disability income benefits and what are some of the disability benefits that could be integrated?

B. A benefits broker recently visited XYZ and recommended replacing LTD with Critical Illness to save premium cost. Is that a good idea? Explain why or why not.

C. You didn’t mention anything about Basic Life. Describe the provisions within Life insurance that could be removed to save cost.

D. One of the topics discussed during the meeting was how to increase productivity rather than reduce cost. Outline some of the benefits of a Health Management Program from both an organizational perspective and from an employee perspective.

E. Despite the target to reduce costs, Company XYZ needs to stay competitive in its industry and would like to consider a flexible benefits program for its retirees. However, given the smaller population of retirees, anti-selection is a major concern. Describe some design and pricing strategies that can be employed to mitigate anti-selection issues in a retiree flexible benefits program.

F. Notwithstanding the above, describe other design components for XYZ to consider when designing an adequate and sustainable retiree benefits program.
You are the newly-appointed consultant to Yretsym, a software development company located in Montréal, QC. Yretsym has 120 employees, all of whom are residents of the province of Québec.

Several years ago, Yretsym decided to self-insure its group medical plan. At that time, claims experience tended to be good and stable. The plan is entirely paid for by the employer and is administered by ABC Life Insurance Company on an Administrative Services Only basis, without any stop-loss nor large amount pooling.

There are two types of coverage:

- Employee without dependents (individual) - 20 employees are in this situation
- Employee with dependents (family) - 100 employees are in this situation

Employees with single coverage kept this coverage for the whole year;

Employees with family coverage kept their coverage for the whole year too.

There were no hires nor departures during the year.

ABC charges a provisional monthly amount of $50 for individual coverage and $125 for family coverage.

At calendar year-end, ABC calculates the claims paid and its fees and applies the total against the provisional amounts collected. Any surplus is returned to Yretsym, any deficit is paid to ABC.

It is now January 2018 and the 2017 year experience differed widely from expectations:

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Provisional Deposit</th>
<th>Paid Claims</th>
<th>Claims Admin. Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>$12,000</td>
<td>$60,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>Family</td>
<td>$150,000</td>
<td>$180,000</td>
<td>$18,000</td>
</tr>
<tr>
<td>Total</td>
<td>$162,000</td>
<td>$240,000</td>
<td>$24,000</td>
</tr>
</tbody>
</table>

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The ABC Life insurance company also charged a $5,000 general administration fee.

This situation is due to an unexpected $50,000 prescription drug payment under single coverage and an unexpected $40,000 prescription drug payment under family coverage.

A. Calculate the various taxes (excluding income tax) to be paid for this plan. Show each tax separately.

B. Determine the taxable benefit applicable to the employees of Yretsym (single and family coverage separately).

C. Calculate the impact of the Québec pooling (pool charge and amount claimed to the pool), if any, on this plan.

D. Comment on this situation.
**Question 20**

ABC Inc. is a newly incorporated insurance company in Canada specializing in Group Long Term Disability insurance. The company had a great year attaining its $15 M sales objective. Private investors have financed an initial capital injection of $10M. All sales occur on January 1\textsuperscript{st} and all policies were issued at the beginning of the year.

You are given the following information about the product:

- 6-month elimination period.
- Benefits until age 65.
- Two-year own occupation period.
- Benefit payments are $2,000 per month and occur at the end of the month.
- Claims management expenses are $100 per month.
- At the end of the year, there were 15 open claims reserves, for individuals age 40.
- The 15 open claims have disability dates of March 1, 2016.
- Termination rates are 2% per month for all ages.
- All assets are invested in cash or federal government bonds.
- ABC’s tax rate is 25%.

You are the valuation actuary for ABC Inc.

A. List considerations for selecting best estimate values and margins for each of the following assumptions:
   
i. Termination rates
   ii. Interest rate
   iii. Expenses

B. Assuming the following CALM interest rates:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>3.0%</td>
<td>2.8%</td>
<td>3.3%</td>
<td>3.2%</td>
<td>3.1%</td>
<td>2.7%</td>
<td>3.4%</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

i. Calculate reserves for open disability claims at December 31, 2016 assuming minimum margins for termination and no additional margins for expenses.

*(continued on next page)*
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ii. Calculate reserves for open disability claims at December 31, 2016 assuming maximum margins for termination and expenses.

iii. Complete ABC’s income statement and balance sheet assuming margins from ii.

<table>
<thead>
<tr>
<th>Income Statement</th>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>?</td>
<td>Cash 1,000,000</td>
</tr>
<tr>
<td>Investment Income</td>
<td>450,000</td>
<td>Bonds ?</td>
</tr>
<tr>
<td>Claims</td>
<td>?</td>
<td>IBNR reserves 5,000,000</td>
</tr>
<tr>
<td>Change in Reserves</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Expenses</td>
<td>1,950,000</td>
<td>Surplus ?</td>
</tr>
<tr>
<td>Taxes</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Profit</td>
<td>1,624,664</td>
<td></td>
</tr>
</tbody>
</table>

iv. What is the impact on the LICAT total ratio and core ratio of using maximum or minimum margins assuming that the base solvency buffer remains the same?