Exam GHCORC

Group and Health Core Exam - Canada
MORNING SESSION

Date: Wednesday, May 1, 2019
Time: 8:30 a.m. – 11:45 a.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 100 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 40 points).

   a) The morning session consists of 8 questions numbered 1 through 8.

   b) The afternoon session consists of 6 questions numbered 9 through 14.

   The points for each question are indicated at the beginning of the question. Questions 3, 4, and 10 pertain to the Case Study.

2. Failure to stop writing after time is called will result in the disqualification of your answers or further disciplinary action.

3. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions on the exam booklet.

Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.

2. Write on only one side of a sheet. Start each question on a fresh sheet. On each sheet, write the number of the question that you are answering. Do not answer more than one question on a single sheet.

3. The answer should be confined to the question as set.

4. When you are asked to calculate, show all your work including any applicable formulas.

5. When you finish, insert all your written-answer sheets into the Essay Answer Envelope. Be sure to hand in all your answer sheets because they cannot be accepted later. Seal the envelope and write your candidate number in the space provided on the outside of the envelope. Check the appropriate box to indicate morning or afternoon session for Exam GHCORC.

6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

Canadian version of this exam is recognized by the Canadian Institute of Actuaries.

Tournez le cahier d'examen pour la version française.

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CASE STUDY INSTRUCTIONS

The case study will be used as a basis for some examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular plan design to a company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.

****BEGINNING OF EXAMINATION****
Morning Session

1. (*6 points*) You are an actuary working for Western Blue, an insurance company that specializes in insuring group benefits for employer groups. Part of your role is managing personal information at Western Blue.

(a) (*1 point*)

(i) Define personal information.

(ii) Describe what personal information must be protected.

(b) (*3 points*) Describe the principles governing the protection of personal information.

(c) (*1 point*) Western Blue has outsourced the claims administration to a third-party administrator. The viewpoint from management is that this change will relieve Western Blue of any obligations with respect to protecting personal information.

Critique this viewpoint.

(d) (*1 point*) A plan sponsor has requested their employees' claims files for the purpose of an internal claims audit on its group benefits plan.

Evaluate whether or not Western Blue should approve this request. Justify your response.

2. (*7 points*) You work for a Canadian insurance company that is evaluating the impact of the new accounting standards IFRS 17 on its insurance contracts. The company is looking to adopt a general model approach (building block approach) on a one year group insurance policy.

You are provided with the following best estimate cash flows and Canadian Asset Liability Method (CALM) assumptions previously used under IFRS 4:

Single premium	$10,000
Commission	10% of premium
Policy maintenance expense	6% of premium
Overhead management expense allocated to block	$900
Tax	0%
Present value of claims	$6,000
CALM assumptions:	
Morbidity Provision for Adverse Deviation (PfAD)	15% of present value of claims
Change in interest rate environment risk PfAD	7.5% of present value of claims

(a) (*1 point*) Describe the characteristics of risk adjustment for non-financial risk under IFRS 17.

(b) (*1 point*) Calculate the liability at contract inception for the insurance contract under IFRS 4. State your assumptions and show your work.

(c) (*2 points*) Calculate the contract service margin under IFRS 17. Assume risk adjustment is set at the same level of total PfADs under IFRS 4. State your assumptions and show your work.

(d) (*2 points*) Compare the liability and net income statement at contract inception under both IFRS 4 and IFRS 17. Show your work.

(e) (*1 point*) Justify whether this product is eligible for the premium allocation approach.

Questions 3 and 4 pertain to the Case Study

3. (*13 points*) Management at Van Brunt & Co. is struggling to manage its talent needs with a number of upcoming retirements. Consequently, it is considering extending offers to new retirees to return to work on a contract basis. Management expects that retirees who accept these offers will return after one year in retirement and stay for a period of two years before returning to retiree status.

Van Brunt's group benefits coverage is provided by Living Daylights Life and Health Insurance Company (Living Daylights). Active employees are enrolled under the Enhanced 1 plan for health and dental benefits. Under a proposed new post-retirement extended health care program, an additional division would be created for employees who retire after age 55 with at least 10 years of service. The new division will maintain the same health benefits to age 65; however, retirees will not be eligible for dental benefits.

Van Brunt reports financial results under both IAS 19 and ASC 715.

Assume the following additional information:

- Retirement: 100% at age 63
- Other decrements: 0%
- Current post-retirement plan per member claims cost at age 63: $1,250 per annum, assumed to be paid in the middle of the year
- Trend rate: 4% per annum
- Aging: 2% per annum
- Spot Discount Rate (SDR) at a duration of x years is assumed to follow a logarithmic distribution with:

$$SDR(x) = \frac{\ln(x)}{125} + 1.35\%$$

The distribution of current membership is as follows:

Age	Service	Members covered by active plan:
50	10 years	70 employees, 40 spouses
60	15 years	50 employees, 25 spouses

3. Continued

(a) (*8 points*)

(i) (*6 points*) Calculate the defined benefit obligation for the proposed post-retirement medical plan under IAS 19 and ASC 715. State any assumptions and show your work.

(ii) (*2 points*) Compare and contrast how past service costs are recognized under IAS 19 and ASC 715.

(b) (*5 points*) As extra incentive to return to work, management is considering offering those retirees that return on a contract basis either:

- a health spending account (HSA), in addition to the post-retirement plan; or
- allowing the retiree to be eligible for both the active and post-retirement plans simultaneously.

(i) (*1 point*) Describe the Canadian Life and Health Insurance Association (CLHIA) guidelines governing the coordination of benefits when a member is eligible for an active and post-retirement group plan simultaneously.

(ii) (*4 points*) James Doe is one of the employees considering returning on a contract basis after retirement. James expects to have the following health and dental costs in the year he returns to work:

Prescription drugs	$1,000
Glasses	$620
Chiropractor	$815
Massage therapist	$400
Dental recall exam	$550
Dentures	$765

Calculate the annual HSA allocation that provides the same value to James as being eligible for both the active and post-retirement plans. State any assumptions and show your work.

Questions 3 and 4 pertain to the Case Study

4. (*5 points*) Sackett Ltd. is a small Canadian employer. It has provided group life insurance and long term disability benefits for many years through Thunderball Corporation without ever incurring a claim. The life insurance benefit includes a waiver of premium benefit. Sackett has recently conducted a market search and has determined they will be moving their insurance arrangements to another insurer effective January 1, 2020.

You are the benefits advisor for Sackett and on December 1, 2019, you learn that Sackett's first long term disability claim was just approved.

(a) (*2 points*) Describe the protection for the disabled member's coverage when the contract with Thunderball Corporation terminates.

(b) (*3 points*) You are given the following information related to the disability plan provision and the disabled member:

Long term disability plan provisions

- Elimination Period: 3 months
- Benefit Formula: 70% of monthly pre-disability income
- Benefit Maximum: $6,000 per month
- Termination Age: 65

Information on the disabled member

- Date of Birth: October 1, 1957
- Date of Disability: October 1, 2019
- Gender: Male
- Annual Income: $80,000

Assume Thunderball uses a discount rate of 4.0% per annum.

Calculate the best estimate reserve that Thunderball holds as of January 1, 2020 for the disabled member's income replacement benefit. State any assumptions and show your work.

5. (*7 points*)

(a) (*2 points*) Describe current Canada Pension Plan (CPP) contribution requirements.

(b) (*2 points*) Susan started to work at Beekman LLP on September 1, 2014, on her 34th birthday. Her starting annual salary was $51,000. She received a 3.5% salary increase effective January 1 each year.

Year	Year's Maximum Pensionable Earnings (YMPE)
2013	$51,100
2014	$52,500
2015	$53,600
2016	$54,900
2017	$55,300
2018	$56,700
2019	$57,900

Calculate Beekman's CPP contribution for Susan in 2014 and 2017. Assume the Year's Basic Exemption (YBE) remains at $3,500 for all years. State your assumptions and show your work.

(c) (*3 points*) John has worked at Beekman since January 1, 2014. His starting annual salary was $50,000, and increased 5% effective January 1 each year. On January 1, 2018, John becomes disabled and is eligible to receive CPP disability benefits. John has two dependent children, aged 14 and 17, when he becomes disabled.

Assume John had no employment or CPP contributions prior to joining Beekman. For 2018, the monthly CPP flat-rate disability pension is $475.00, child pension is $250.75, and maximum disability pension is $1,400.00.

Calculate total monthly CPP disability benefits payable to John. State your assumptions and show your work.

6. (*8 points*) Mega LI, a global financial entity, is considering opening an insurance company in Canada or the US. They decide to set up a Canadian branch called Can LI that specializes in selling non-participating life insurance with no experience rating refund options.

You are provided the following:

	December 31, 2017	**December 31, 2018**	**December 31, 2019 (expected)**
Total active life reserves	$300,000,000	$350,000,000	$400,000,000
Life insurance investment income/(loss)	($5,000,000)	Not yet available	Not yet available
Prescribed yield	3.4%	3.7%	4.0%

(a) (*2 points*) Compare and contrast tax financial reporting between the US and Canada.

(b) (*3 points*) List and describe the types of maximum tax actuarial reserves (MTARs) that may apply to Can LI under Canadian regulation.

(c) (*1 point*) Describe tax considerations related to working with an offshore entity.

(d) (*2 points*) Calculate Can LI's investment income tax for 2018. Show your work.

7. (*5 points*) Clarkson Inc. is a small research firm located in Toronto with all employees residing in Ontario. Clarkson had a prescription drug plan in 2012 that was discontinued. Census data and claims experience for 2012 for their small employee group is shown below. The same employees still work for Clarkson in 2019.

2012 Data	**Chuck**	**Mia**	**Jacob**
Coverage Type	Single	Family	Single
Employee Age	61	42	17
Annual Paid Claims	$2,100	$500	$1,100
Spouse Age		44	
Annual Paid Claims		$1,650	
Child 1 Age		15	
Annual Paid Claims		$100	
Child 2 Age		12	
Annual Paid Claims		$80	

(a) (*1 point*)

(i) Define value based pricing.

(ii) Describe the benefits associated with this approach.

(b) (*4 points*) Clarkson is considering re-introducing the same prescription drug benefits plan beginning in 2019.

- Average unit cost of prescription drugs has increased at a rate of 5% per annum
- 75% of every person's drug costs are for drugs on the Ontario Drug Benefit formulary
- Prescription drug utilization is assumed to increase at a rate of 1% for each year of attained age
- 30% of costs are attributable to multi-source brand name drugs (brand name drugs where a generic alternative exists)
- Assume OHIP coverage in effect as of January 1, 2018

(i) (*3 points*) Calculate the total claims cost of the prescription drug benefit plan in 2019 if the 2012 plan is reinstated.

(ii) (*1 point*) Calculate the impact to the total prescription drug plan claims cost in 2019, assuming a mandatory generic substitution provision is added to the plan.

State your assumptions and show your work.

8. (*9 points*)

(a) (*2 points*) List and describe the purposes of stress testing as outlined by the Office of the Superintendent for Financial Institutions Canada (OSFI).

(b) (*1 point*) List institutions where Canadian Asset Liability Method (CALM) stress testing should be applied.

(c) (*2 points*) List the types of risks that a comprehensive stress testing program should address.

(d) (*1 point*) List and describe the general considerations for stress testing programs.

(e) (*3 points*) You have been asked to complete the CALM calculation for a closed block of group long term disability business. You are provided with the following:

- Balance Sheet items

Assets backing reserves	$1,500
Cash	$100
Reserves	$1,560

- Reserve cash flow is $530 per year for the next three years
- Invested asset cash flow is $500 per year for the next three years
- Short-term interest is 2% per annum

(i) (*2 points*) Calculate the net cash flow at the end of year 3.

(ii) (*1 point*) Calculate the change in net cash flow if the short-term interest rate drops to 1% per annum in each of the 3 years.

State any assumptions and show your work.

****END OF EXAMINATION****
Morning Session

USE THIS PAGE FOR YOUR SCRATCH WORK

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